JVC

SERVICE MANUAL

STEREO CASSETTE DECK

MODEL KD-VR320 A/B/C/E/G/J/U

Contents

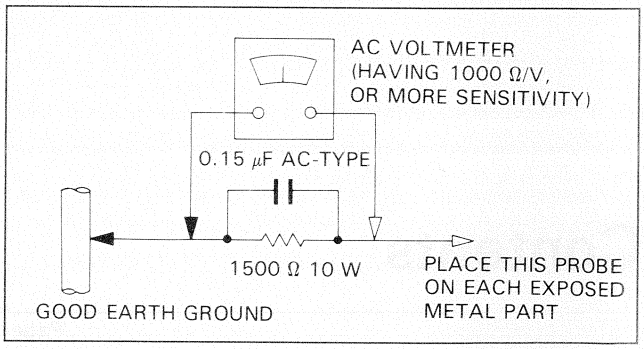
	Page
Safety Precautions	2
Features	3
Specifications	3
Parts Functions and Nomenclature	4
Connections	6
Location of Main Parts	7
Removal of Main Pars	8
Main Adjustment	10
Integrated Circuit	14
Block Diagram	17
Wiring Connections (1)	18
Wiring Connections (2)	19
Stnadard Schematic Diagram of KD-VR320 (Amplifier Circuit)	20
Standard Schematic Diagram of KD-VR320 (Mechacon Circuit)	21
P.C. Board Parts (# ~ 9500)	22
P.C. Board Parts (#95001 ~)	23
P.C. Board Parts List	24
DIN Circuit P.C. Board (KD-VR320 G)	26
DIN Circuit P.C. Board Parts List (KD-VR320 G)	26
Exploded View of Mechanism Assembly	27
Mechanism Assembly Parts List	28
Exploded View of Enclosure Assembly	29
Enclosure Assembly Parts List	30
Packing and Parts List	31
Accessories	Back Cover

No. 4249
March 1985

Safety Precautions

1. The design of this product contains special hardware. Many circuits and components specially for safety purposes.
   For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Repacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the product have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. Electrical components having such features are identified by (⚠) on the schematics and parts list in Service manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list in Service manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and/or the like to be separated from live parts, high temperature part, moving parts and/or sharp edges for the prevention of electric shock and fire hazard.
   When service is required, the original lead routing and dress should be observed, and they should be confirmed to be returned to normal, after re-assembling.
5. Leakage current check
   (Safety for electrical shock hazard)
   After re-assembling the product, always perform an isolation check on the exposed metal parts of the Products (antenna terminals, knobs, metal cabinet, screw heads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

   Do not use a line isolation transformer during this check.
   - Plug the AC line cord directly into the AC outlet. Using a ''Leakage Current Tester'', measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5 mA AC (r.m.s.).
   - Alternate check method.
     Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1500 Ω 10 W resistor paralleled by a 0.15 μF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.)
     Measure the AC voltage across the resistor with the AC voltmeter.
     Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75 V AC (r.m.s.).
     This corresponds to 0.5 mA AC (r.m.s.).



Features

1. **U-Turn auto-reverse for recording/playback**
   - Flip Reverse head system with diecast head assembly.
2. **2-motor full-logic mechanism**
   - Exclusive motor for mechanism drive.
   - Silent mechanism.
3. **2-color FL peak meter**
4. **DOLBY* B/C NR systems**
5. **Index scan facility**
6. **Blank search facility**
7. **Music scan facility**
   "Under license from Staar S.A., Brussels, Belgium."
8. **Automatic record muting facility**
9. **Mechanism mode indicators**
10. **Timer start mechanism**
11. **Automatic input selection system**

*Noise reduction system manufactured under license from DOLBY Laboratories Licensing Corporation.
*"DOLBY" and the double-D symbol are trademarks of DOLBY Laboratories Licensing Corporation.

Specifications

Type	: Stereo cassette deck
Track system	: 4-track, 2-channel
Tape speed	: 1-7/8 inch/sec (4.8 cm/sec)
Frequency response	: (−20 dB recording) Metal tape: *1 30−15,000 Hz (±3 dB) CrO_2 tape: * 2 30−15,000 Hz (±3 dB) Normal tape: *3 30−14,000 Hz (±3 dB) (0 dB recording) Metal tape: 30−12,500 Hz (±3 dB) CrO_2 tape: 30−8,000 Hz (±3 dB) Normal tape: 30−8,000 Hz (±3 dB)
S/N ratio	: 58 dB (S = 1 kHz, K3 = 3%, N = A-weighted, Metal tape) The S/N is improved by about 15 dB at 500 Hz, by max. 20 dB at 1 kHz ~ 10 kHz and 4 dB MOL at 10 kHz with DOLBY C NR on and improved by 5 dB at 1 kHz and by 10 dB at above 5 kHz with DOLBY B NR on.
Wow and flutter	: 0.05% (WRMS) 0.16% (DIN 45 500)
Crosstalk	: 55 dB (1 kHz)
Harmonic distortion	: K3; 0.5%, THD; 1.0% (Metal tape, 1 kHz 0 VU)
Channel separation	: 40 dB (1 kHz)
Heads	: METAPERM head (for recording/playback)/2-Gap Ferrite head (for erasure) combination head
Motor	: Electric governed DC motor for capstan and reel × 1 DC Motor (for FF & Rewind) × 1 DC Motor (for Mechanical drive) × 1
Fast wind time	: 95 sec. with C-60 cassette
Input terminals	:
Mic jack × 2	; Max. sensitivity; 0.4 mV (−68 dBV) Matching impedance; 600 Ω−10 kΩ
Input jack × 2	; Min, input level; 80 mV Input impedance; 35 kΩ
Output terminals	:
Output jack × 2	; Output level: 300 mV Output impedance: 5 kΩ
Phones jack × 1	; Output level; 0.3 mW/8 Ω Matching impedance; 8 Ω−1 kΩ
Power requirement	: AC 240/220/120 V, 50/60 Hz (KD-VR320 A) AC 120 V 60 Hz (KD-VR320 C/J) AC 240/220/115 V, 50/60 Hz (KD-VR320 U)
Power consumption	: 17 W
Dimensions	: 17-1/8" (435 mm) W 4-3/8" (110 mm) H 11-1/8" (282 mm) D (with feet, buttons, switches)
Weight	: Approx. 9.5 lbs (4.3 kg)
Accessories	: Pin cords 2

Design and specifications subject to change without notice.

Parts Functions and Nameclature

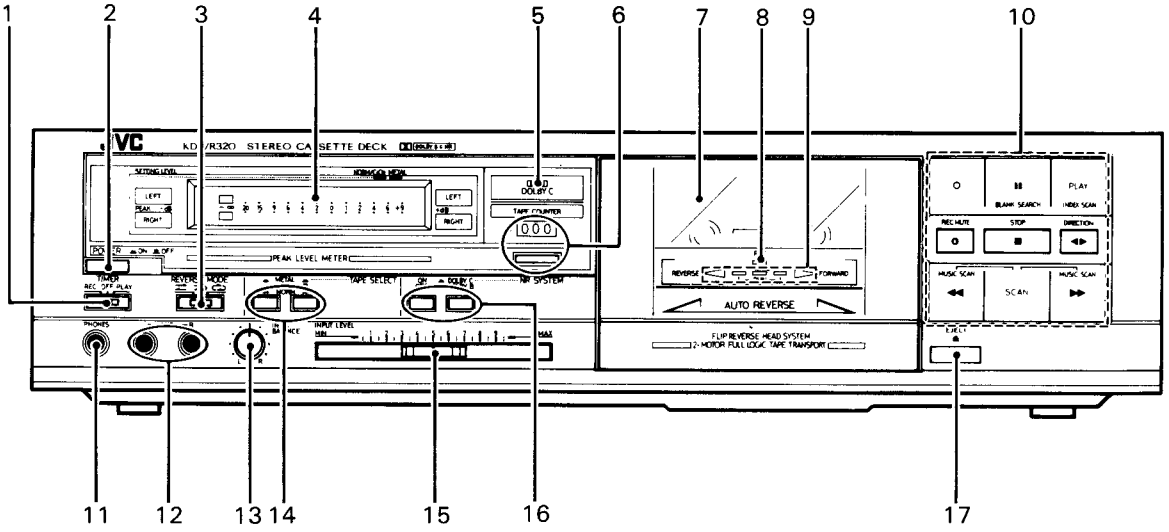


Fig. 1

1. **TIMER switch**
   Set to REC or PLAY for timer recording or timer playback using an audio timer. In other cases, be sure to set to OFF.
2. **POWER switch**
3. **REVERSE MODE switch and indicators**
   Switch the position of this switch to enter the reverse mode.
   : Continuous play
   : Full recording or playback
   : Single recording or playback
4. **PEAK LEVEL METER**
   This indicates the record input level when recording and recorded signal level on the tape when playing back.
5. **DOLBY C NR indicator**
6. **TAPE COUTNER and reset button**
   The counter shows the tape running. If you reset the counter to "000" by pressing the reset button and note the tune and counter reading, it will be an index for future reference.
7. **Cassette holder**
8. **REC indicator**
   Lights during the recording and record-pause modes. Also flashes during record muting.
9. **Mechanism mode indicators**
   When the tape starts running, the three LEDs between the direction indicators flash in sequence to show the direction of tape movement and the mode of operation as follows:
   - **Recording/Playback**
     LEDs flash in sequence at an interval of about 1 second in the direction of tape travel.
   - **Fast Forward/Rewind**
     LEDs flash rapidly in sequence in the direction of tape travel.
   - **SCAN**
     Each LED flashes twice in rapid sequence in the direction of tape travel.
   - **PAUSE**
     Only the center LED lights.
10. **Cassette operation buttons**
    ◄► DIRECTION:
    Press to change the direction of tape travel. The direction is shown by the indicator (◄ or ►).
    II (pause)/BLANK SEARCH:
    Press to stop the tape temporarily. Press the PLAY key to cancel the pause mode. When this key pressed simultaneously with the SCAN key, the blank search operation is performed.
    O (record):
    Press O and PLAY keys simultaneously for recording. Press the O and II keys simultaneously for record pause.
    O REC MUTE:
    Press to make about 4—5 seconds, non-recorded section between tunes during recording.
    PLAY/INDEX SCAN:
    Press to start recording/playback. When this key is pressed simultaneously with the SCAN key, the index scan operation is performed.

◄◄ **(rewind)/MUSIC SCAN:**
Press to fast wind the tape from right to left. When this key is pressed simultaneously with the SCAN key, the music scan operation is performed.
SCAN:
Press to perform music scan, blank search or index scan.

►► **(fast forward)/MUSIC SCAN:**
Press to fast wind the tape from left to right. When this key is pressed simultaneously with the SCAN key, the music scan operation is performed.

■ **STOP:**
Press to stop the tape.

11. **PHONES jack**
Connect headphones (with an impedance of 8 Ω—1 kΩ).
12. **MIC jacks (L, R)**
Connect microphones (with an impedance of 600 Ω to 10 kΩ) to these jacks.
With microphones connected to these jacks, the input to the LINE IN (REC) terminals is cut off automatically.
13. **INPUT BALANCE control**
Adjust the balance between the left and right channels of recording input levels. The center click position is the standard position.
14. **TAPE SELCT switches**
Select the switch positions according to the tape to be used during recording and playback.
15. **INPUT LEVEL control**
Adjust the recording level with this control.
16. **NR SYSTEM switches**
The left switch switches on and off the noise reduction circuits and the right switch selects which noise reduction system (DOLBY B NR or DOLBY C NR) is to be used.
17. **⏏ EJECT button**
Press to open the cassette holder.

Connections

- Do not switch the power on until all the connections are completed.
- Insert the plugs firmly, or poor contact will result, causing noise.
- When the pin-plug cords are employed, always connect the white plug to the left channel terminal. This helps to avoid reversed connections.

Note:
When installing the deck, be sure to install at a distance from your amplifier. If they are stacked, noise (hum) may occur.

1. Connection to a stereo amplifier

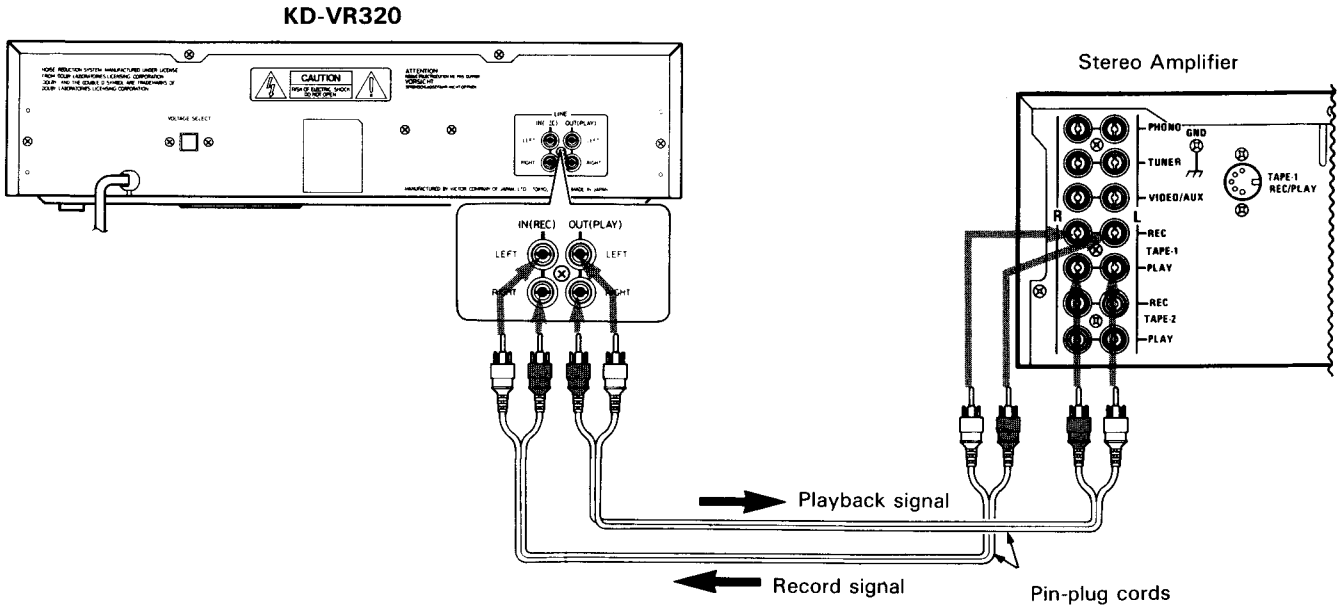


Fig. 2

2. Recording through microphones

- Microphones having an impedance of 600 Ω to 10 kΩ can be employed.

Notes:
1. To avoid howling, turn the amplifier's volume down.
2. When the microphones are plugged in, LINE IN terminals are automatically cut off.

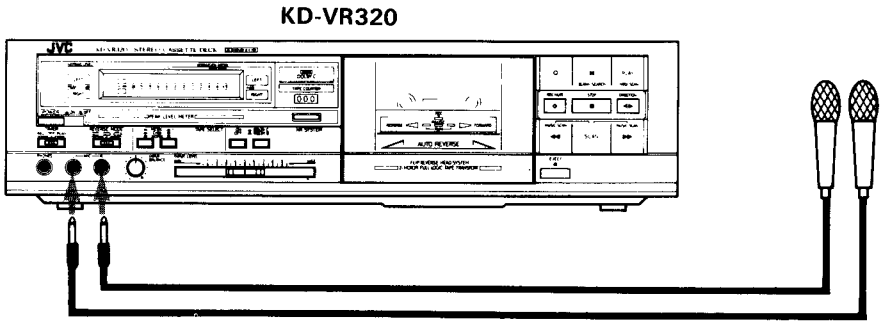


Fig. 3

3. Tape dubbing

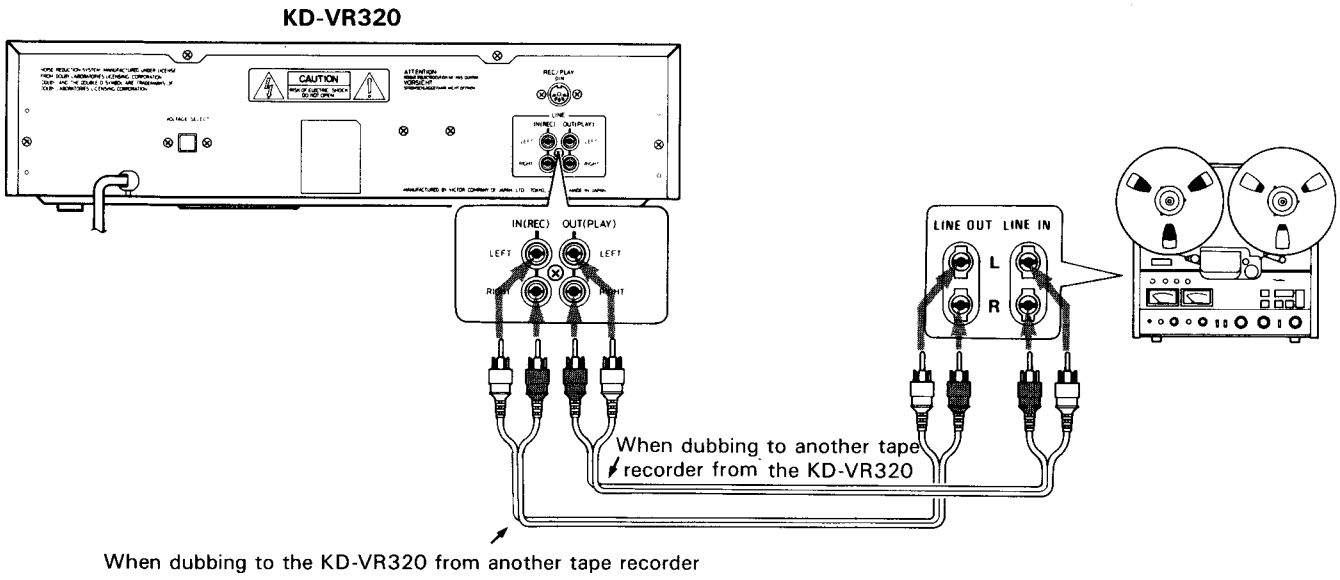


Fig. 4

Location of Main Parts

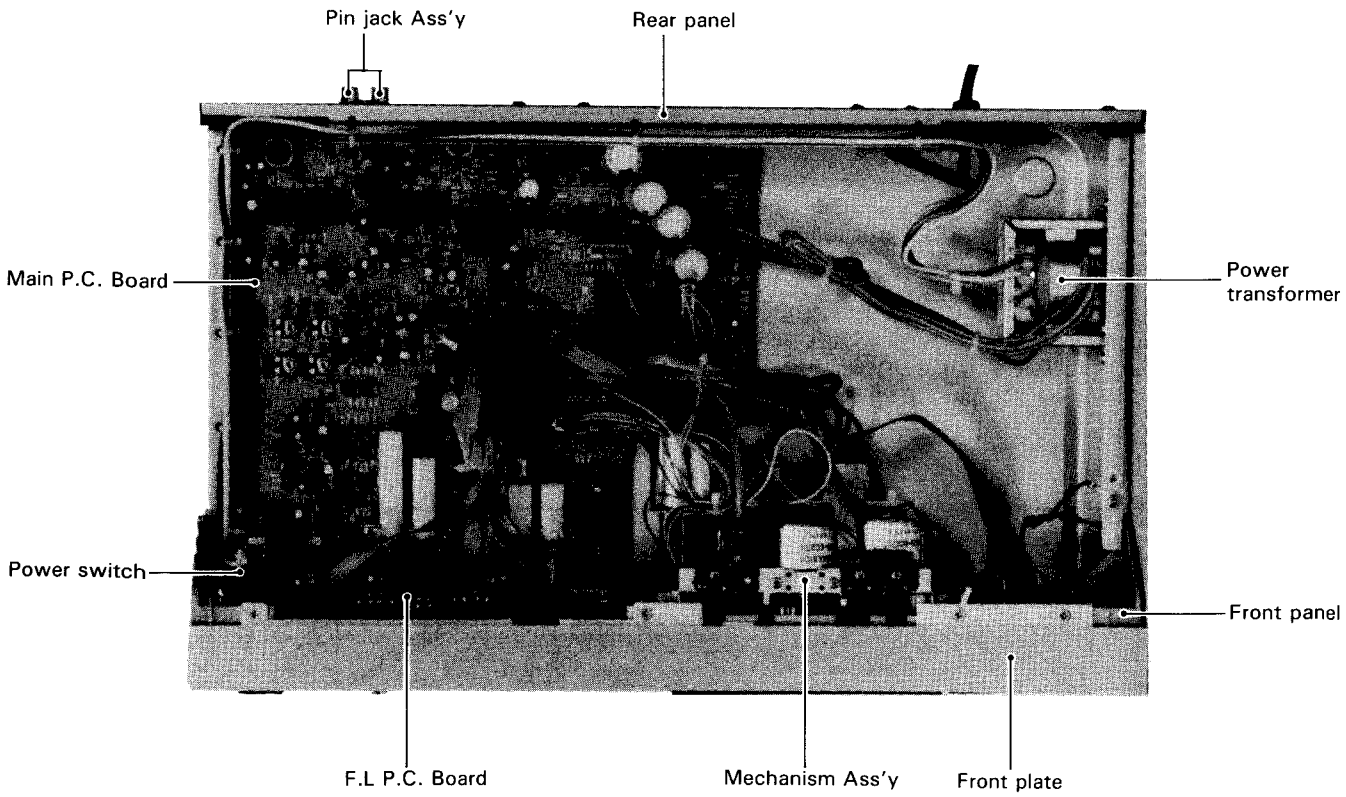


Fig. 5

Removal of Main Parts

Enclosure Assembly of Parts and Electrical Parts

■ **Top cover**

1) Remove the four screws (1) fastening the top cover on both sides.
2) Remove the two screws (2) fastening the top cover.

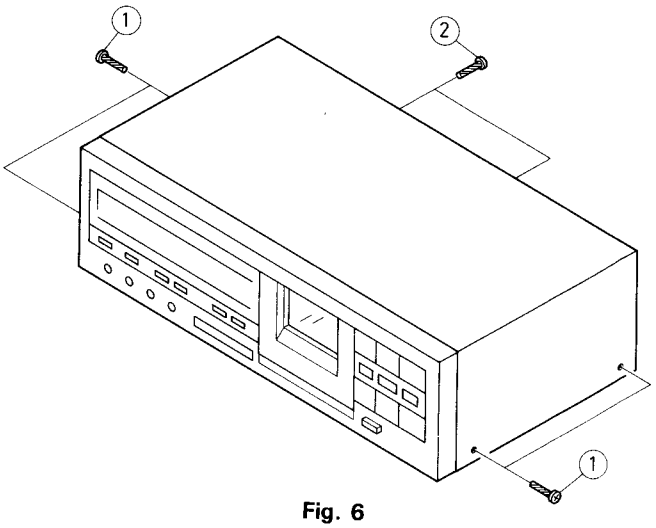


Fig. 6

■ **Bottom cover**

1) Remove the four screws (3) and the one screws (4) fastening the bottom cover.

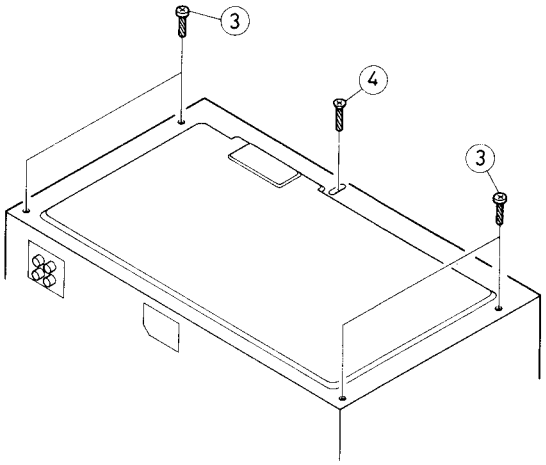


Fig. 7

■ **Cassette Lid**

Push the eject button to open the cassette door upwards to unlock its pawls off both sides.

■ **Front plate**

1) Pull off the one knob (6) (INPUT BALANCE)
2) Remove the five screws (5) festening the front panel.

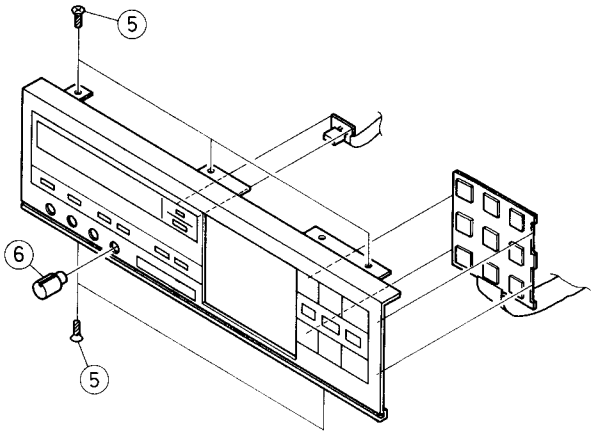


Fig. 8

■ **Key switch P.C. Board Assembly**
Remove the key switch assembly disengaging it from four hooks.

■ **DOLBY C Indicator**
Remove the DOLBY C Indicator diengaging it from two hooks.

■ **Mechanism Assembly**
1) Remove the counter belt.
2) Open the cassette door push the eject button.
3) Remove the four screws (8) festening the mechanism Assembly.

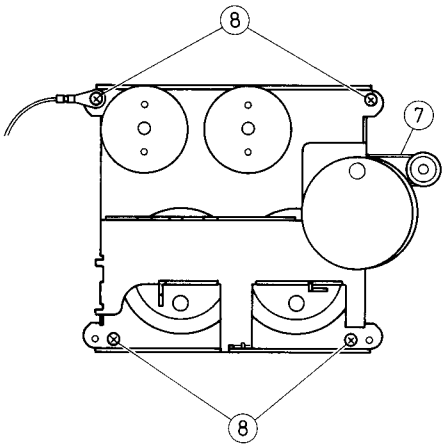


Fig. 9

■ **Main P.C. Board Assembly**
1) Remove the one screw (9) festening the pin jack on the rear panel.
2) Remove the two screws (10) festening the heat sink on the rear panel.
3) Remove the two screws (11) festing the main P.C. Board.

■ **Tape counter**
Attach by pressing the tape counter body down.

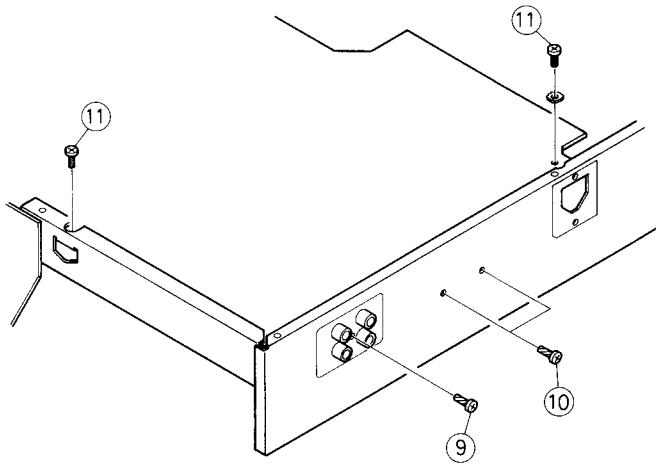


Fig. 10

Main Adjustment

[I] Equipment and Measuring Instruments used for Adjustment

1. Electrical adjustment

1) Electronic voltmeter
2) Audio frequency oscillator
   (range : 50—20 kHz and output 0 dB with impedance 600 Ω)
3) Attenuator
4) Standard tapes for REC/PB
   Maxell UD — Normal tape (TS-5)
   TDK SA — Chrome tape (TS-6)
   JVC ME — Metal tape (TS-7)
   } or equivalent
5) Reference tapes for playback (JVC Test Tape)
   VTT-658 (for head azimuth adj.)
   VTT-656A-A (for motor speed, wow flutter adj.)
   VTT-724 (for Reference Level 1 kHz)
   TTT-739 (for playback frequency response)
   TMT-6447 (for music scanning)
   TMT-6448 (for music scanning)
6) Resistors
   600 Ω (for attenuator matching)

2. Mechanical adjustment

1) Torque testing cassette gauge
2) Blank tape (C-120) for tape running checker.

[II] Mechanical part of Adjustment and Replacement

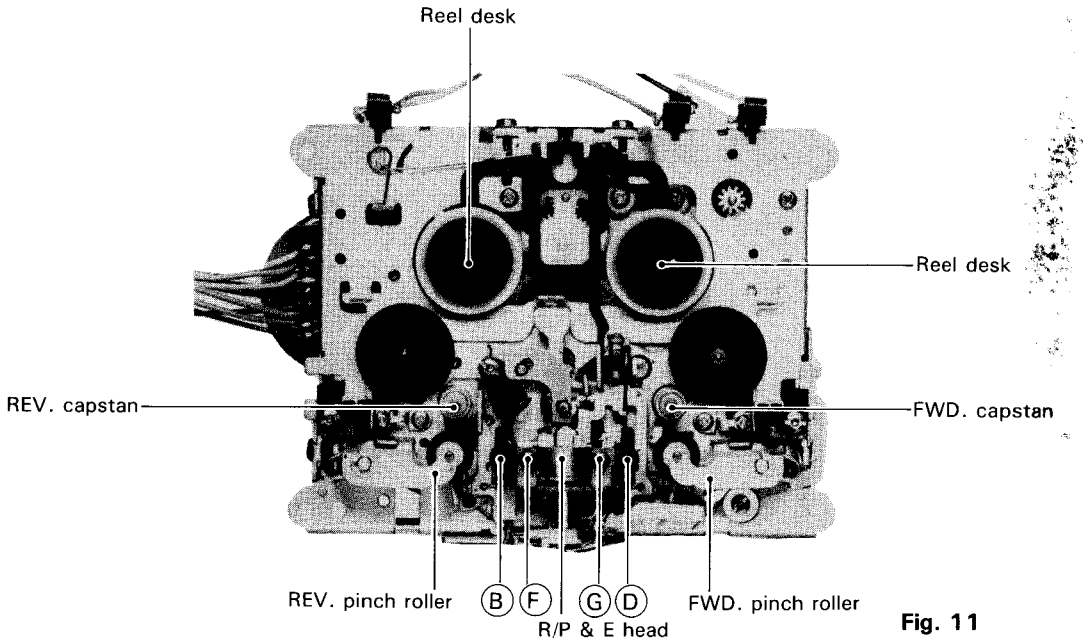


Fig. 11

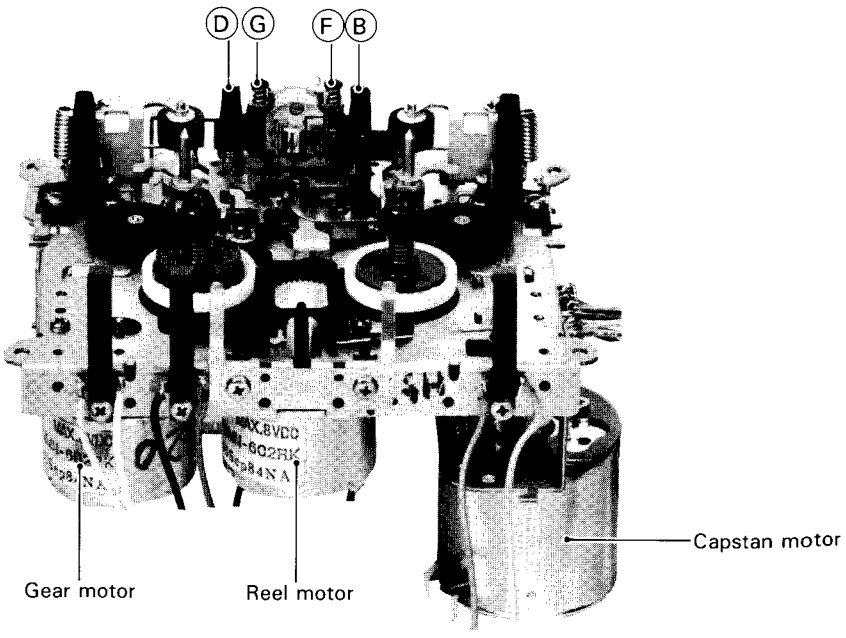


Fig. 12

Tape run adjustment

1) Put the mechanism into the PAUSE mode, then adjust the height of right and left tape guides (B) and (D) to that of the REC/PB head tape guide.
2) After adjustment, protect screws (B) and (D) against loosening by painting screw locking compound.

REC/PB head azimuth adjustment

1) Connect an electronic voltmeter to LINE OUT and a low frequency oscillator and an attenuator to LINE IN.
2) Forward play back VTT-658 with side A towards you, then adjust screw (F) so that the output is maximized.
3) Forward record 12.5 kHz input of – 20 dB on TS-5 with side A towards you, rewind it and check the output level.
4) Set side B of TS-5 towards you, reverse play back the section recorded in 3), and adjust screw (G) so that the output is maximized.
5) After adjustment, protect screws (F) and (G) against loosening by painting screw locking compound.

– when replacing the head –

In the rotary head section for auto reverse, its tilt, azimuth, height, etc. are adjusted precisely. Therefore, when the REC/PB head alone has been repalced, they must be readjusted. In this place, replace the head block.

Others

When assembling the mechanism once it has been disassembled, engage the gear sections so that the markings (holes) of the head base and pinch roller cams are aligned with each other.

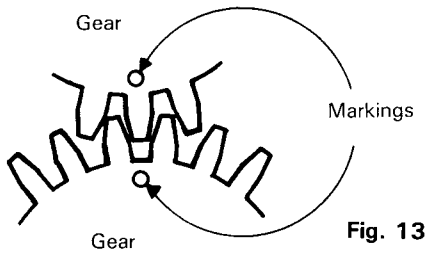


Fig. 13

Mechanical Adjustment

Item	Adjustment	Adjusting point	Standard value	Remarks
Adjusting motor speed	Connect a speed meter (an electronic counter) to the LINE OUT terminals. Play back the VTT-656 test tape. Adjust the semi-fixed resistor in the motor until the reading of the speed meter is 3000 Hz.	Semi-fixed resistor in the motor	3000 Hz	If the speed meter functions as a wow and flutter meter, also, connect the deck to the INPUT terminals of the meter.
Checking wow and flutter	Connect a wow and flutter meter to LINE OUT terminals. Play back the VTT-656 test tape. Check to see if the reading of the meter is within 0.05% (WRMS).		0.05% (WRMS) 0.16% (DIN 45500)	If the reading becomes moving value even if conforming to the standard, a re-claim may be raised. Repairs are necessary.
Checking play-back torque	Employ a torque testing cassette tape for the checking, or remove the cassette cover and use a torque gauge.		40–70 gr-cm	If the standard torque is not obtained, replace the take-up disc assembly.
Checking fast forward torque	Measure the torque in the fast forward mode in the same manner as in the above.		More than 80 gr-cm	If the standard torque is not obtained, perform the following. 1. Clean the capstan belt, the idler circumference, the motor pulley, the take-up reel disc circumference, the flywheel circumference, etc. 2. Replace the belt and idler.
Checking rewind torque	Measure the torque in the rewind mode in the same manner as in the above.		More than 80 gr-cm	If the standard torque is not obtained, clean the capstan belt, idler, motor pulley, flywheel circumference, rewinding idler circumference, left reel disc circumference, etc.
Music scan check	1. Using a TMT-6447. Push the [SCAN] + [►►] or [SCAN] + [◄◄] button to check scanning. 2. Using the TMT-6448, the music scan mechanism does not function.			
Clearance check	For adjustment of the clearance between the Hall IC and magnet, check that the tape does not automatically stop at the start of FF. (This clearance should be adjusted to within 1 ±0.5 mm)			

[III] Electrical Adjustment Location

Main Amplifier P.C. Board Assembly (Top view)

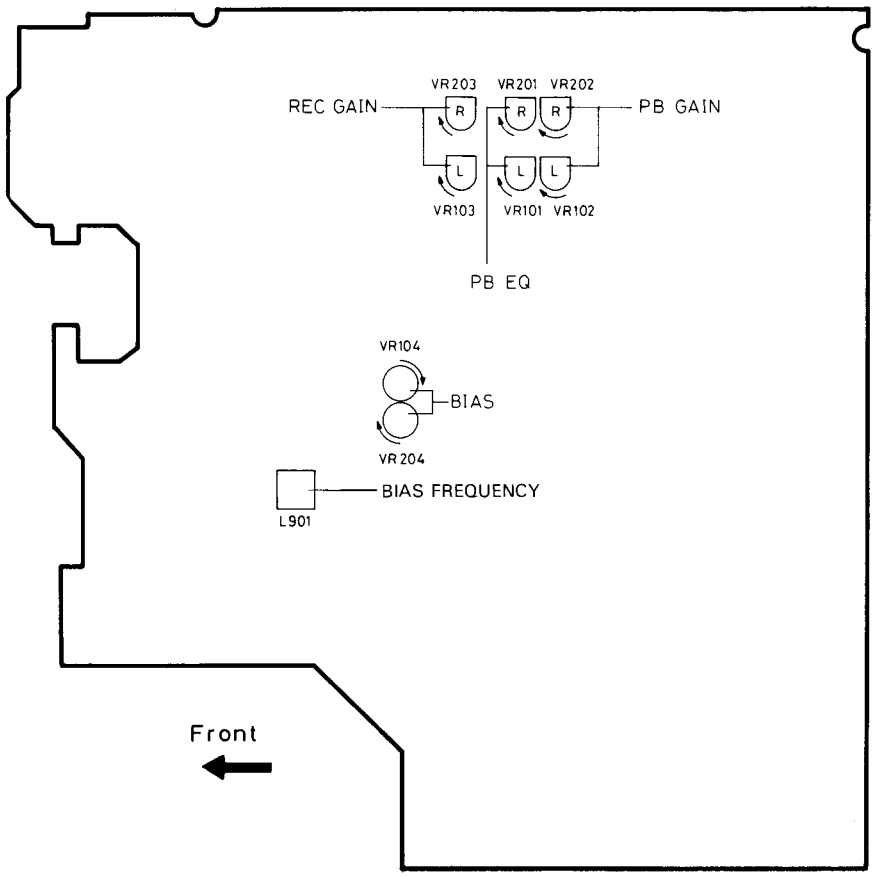


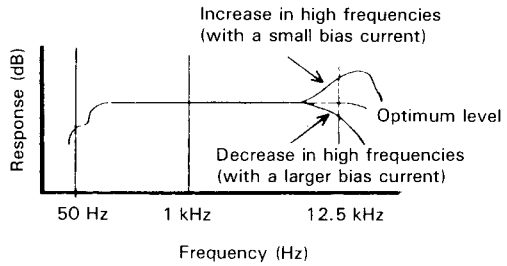
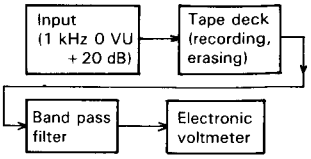
Fig. 14

[IV] Electrical Circuit Adjustment Procedure

In the steps marked by an asterisk (*), adjustment should be performed, however, only checking is sufficient with steps other than those.
Adjustment should be performed in the order of steps 1, 2, 3, ...
Perform this adjustment with the DOLBY switch set to OFF.

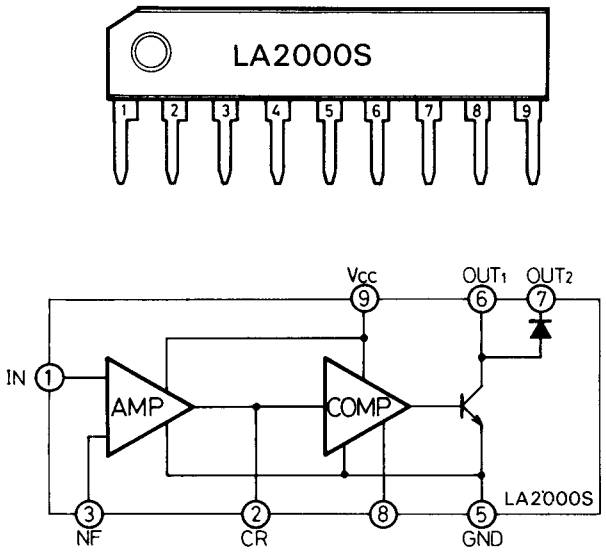
Step	Item	Check and Adjustment			
1	Checking DOLBY circuit (Rec mode)			Frequency Level	Output raise value, deviation value
		Signal input : LINE IN Cal. Level : 400 Hz −6 dBs Output terminal : IC101,201 (21) pin	DOLBY B (Rec)	1 kHz, Cal−40 dB	+5.7 dB ±2 dB
				5 kHz, Cal−20 dB	+3.5 dB ±1.5 dB
				1 kHz, Cal	0 dB +0.5 ~ −1.0 dB
			DOLBY C (Rec)	1 kHz, Cal−40 dB	+16 dB +3 ~ −2 dB
				5 kHz, Cal−20 dB	+2.9 dB ±2.5 dB
				1 kHz, Cal	0 dB ±1 dB

Step	Item	Adjustment	Adjusting point	Standard value	Remarks
2*	Adjusting playback level	1. Playback the VTT-724 Reference tape (1 kHz) with the tape select switch set to the NORM position. 2. Adjust VR102 and VR202 until the LINE OUT becomes about −8 dBs.	VR102 202	−8 dBs (0.3 V)	This adjustment becomes necessary when a change in playback level results (for example, due to head replacement).
3*	Playback frequency response	Playback test tape VTT-739 (63.1 kHz, 10 kHz) for following adjustment. 1) Adjust VR101 and VR201 so that 10 kHz signal and 1 kHz signal gains become flat response.	VR101 201	Reference frequency 1 kHz 0±0.5 dB	NR : OFF TAPE SELECT : NORM

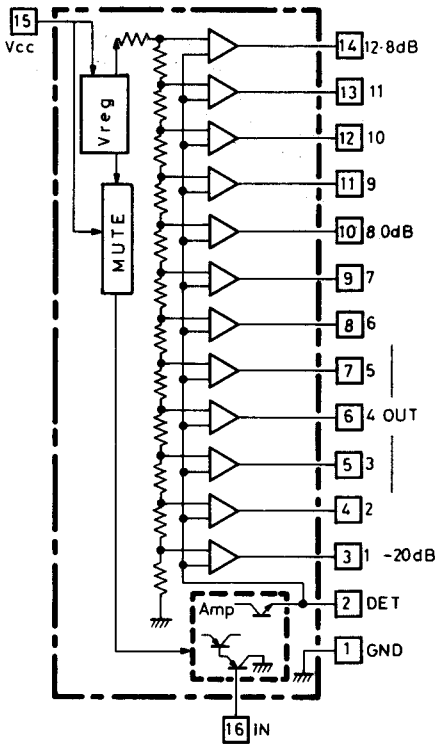
Step	Item	Adjustment	Adjusting point	Standard value	Remarks
4	Checking FL PEAK level meter lighten	1. Set the cassette deck to its recording mode. 2. Apply a 1 kHz, approx. – 10 dB signal to the LINE IN terminals. 3. Adjust the recording level control until the signal is avilable at – 8 dBs at the LINE OUT terminals. 4. Checking the FL PEAK indicator lighten up to 0.			
5*	Checking record/ playback frequency response	Record 1 kHz, 50 Hz and 12.5 kHz signals at an input level of 0 indicator to – 20 dB. Playback the tape. Check to see that the 50 Hz and 12.5 kHz signal output deviations fall within the standard range, using the 1 kHz signal output as a reference.	For NORM tape: VR104 204	Reference frequency; 1 kHz 0±3 dB at 50 Hz 0±0.5 dB at 12.5 kHz	This checking should be performed for normal, chrome and metal tapes and for both right and left channels. 1. Bias current adjustment for a cassette deck should generally be performed referring to the record/playback frequency response. This is because the frequency response of a cassette deck depends more greatly upon the bias current than does that of an open reel deck. The current measuring method described below is an alternative one. 2. If the bias current is not properly adjusted, the record and playback characteristics become as shown below.
					
6	Adjusting recording level	1. Apply a 1 kHz, approx. – 10 dB signal to the LINE IN terminals. Adjust the recording level controls until the signal is available at – 8 dBs at the LINE OUT terminals. 2. After checking to see if the FL PEAK indicator become up to 0, record the signal applied to both left and right channels using normal tape. 3. Play back the recording part. Perform the recording signal adjustment with VR103 and VR203 so that the FL PEAK indicator lighten up to 0.	VR103 203	– 8 dBs	The level difference between left and right channels for normal tape, chrome tape and metal tape should be less than 1 dB. Perform the adjustment using a normal tape, level difference between recording and playback for CrO_2 and metal tapes should be less than 1.5 dB, and that between left and right channels should also be less than 1 dB.
7	Checking record/ playback signal distortion	1. Record a 1 kHz, – 8 dBs signal to LINE IN terminals and perform recording with the FL PEAK indicator lighten up to 0. 2. Play back the recorded part. Check the output with a distortion meter to see if the value conforms to the standard value.		NORM tape; Less than 2% CrO_2 tape; Less than 3% Metal tape; Less than 2%	Be sure to perform this adjustment following bias current and recording level adjustments.
8	Checking signal to noise ratio in recording/ playback	1. Record a 1 kHz, 0 dBs signal. Stop the input by disconnecting from the terminal to perform nonsignal recording. 2. Play back the recorded part. Measure the 0 dB recording output and the non-signal recording output for comparison using an electronic voltmeter. Check to see if the value conforms to the standard value.		NORM, CrO_2 and Metal tapes; More than 42 dB	
9	Checking erasing coefficient	1. Apply a 1 kHz signal to the LINE IN terminals. Adjust the recording level controls until the FL PEAK indicator lighten up to 0. 2. Perform recording with the signal enhanced by 20 dB. 3. Erase a part of the recording. 4. Measure the output difference between the erased part and nonerased part to compare with an electronic voltmeter.		More than 60 dB	For the measuring, connect a band pass filter between the deck and the electronic voltmeter. 
10	Checking bias frequency	–	–	81 kHz ±3 kHz	–

Integrated Circuit

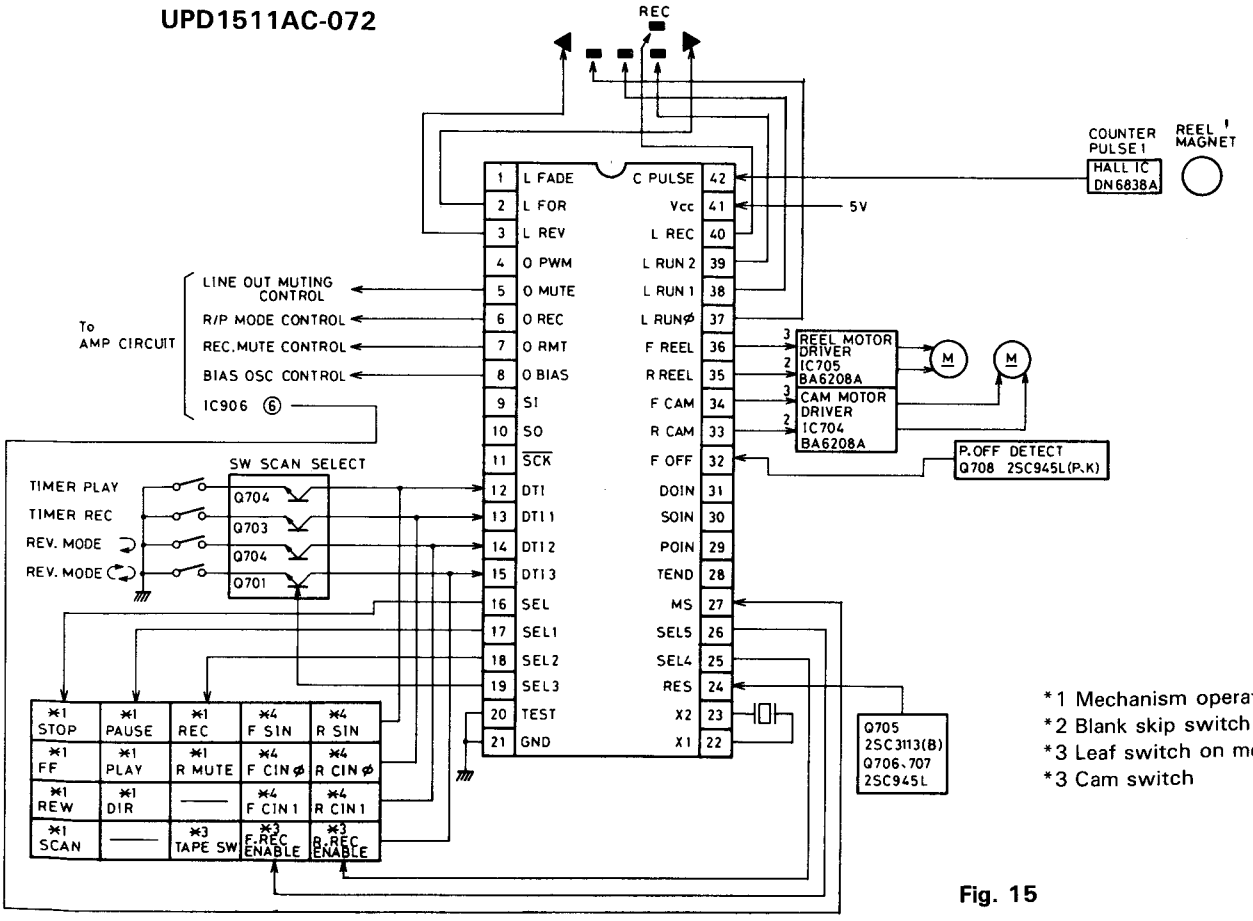
LA2000S



BA6146



UPD1511AC-072



*1 Mechanism operation switch
*2 Blank skip switch
*3 Leaf switch on mechanism As
*3 Cam switch

Fig. 15

Function chart of pins of mechanism control microprocessor (UPD1511AC-072)

Pin No.	Pin Name	Function
1	L FADE	Fade LED control output (Lights at L.) Not used in KD-VR320.
2	L FWD	▷ (Forward) LED control output (Lights at L.)
3	L REV	◁ (Reverse) LED control output (lights at L.)
4	O PWM	PWM signal output for electronic volume control in auto fade-in or-out (H other than fade operation.) Not used in KD-VR320.
5	O MUTE	Line out muting control output (Muting operates at H.)
6	O REC	Rec/play switching control output in Amp. circuit (switched to Rec mode at L.)
7	O RMT	Rec mute control output (Rec mute operates at H.)
8	O BIAS	Bias oscillation circuit control output (Bias oscillates at H.)
9	SI	Not used.
10	SO	
11	SCK	
12	DTI0	Condition input ports for switches (dynamic scan input ports) For scanning sequence, refer to separate table.
13	DTI1	
14	DTI2	
15	DTI3	
16	SEL0	Selection output ports for switches (dynamic scan output ports) For scanning sequence, refer to separate table. Scan cycle is 5 msec. SEL0, 1 and 2 are L when selected; H when not selected. SEL3 is H when selected: L when not selected.
17	SEL1	
18	SEL2	
19	SEL3	
20	TEST	Not used. Connected to GND.
21	GND	Power supply terminal (negative)
22	X1	Internal clock oscillation circuit terminals
23	X2	
24	RES	Microcomputer reset terminal (L momentarily when the power is switched ON; normally H.)
25	SEL 4	Selection output ports for switched (dynamic scan output ports) L when selected, H when not selected
26	SEL 5	
27	MS	Blank detection input in *1MS (H: not blank, L: blank)
28	TEND	Quick reverse input terminal (tape end) detection circuit output signal (When H is input for more than 80 msec, tape is quick-reversed to the end.) Not used in KD-VR320.
29	PO IN	*2Counter microcomputer input terminal. Determines the following mechanism operation mode in memory operation. Not used in KD-VR320.
30	SO IN	
31	DO IN	
32	P OFF	Power off detection signal input (When it continues H more than 10 msec.)
33	R CAM	Cam motor rotation control output (Both ports are H when OFF.)
34	F CAM	
35	R REEL	Reel motor rotation control output (Both ports are L when OFF.)
36	F REEL	
37	L RUN0	Tape running LED control output (Light at L.)
38	L RUN1	
39	L RUN2	
40	L REC	Rec LED control output (Lights at L.)
41	Vcc	Power supply terminal (+5 V)
42	C PULSE	Reel pulse input for auto stop detection

*1) MS: Music scan, index scan, blank search and blank skip Not used in KD-VR320.
*2) Signals in memory operation and following mode
Not used in KD-VR320.

Microprocessor voltages and waveforms at each pin

① 5.8 V
② 4.8 V at REV and 0 V in FWD mode.
③ 0 V at REV and 4.8 V in FWD mode.
④ 4.8 V
⑤ 0 V in the REC mode only and 4.2 V in other modes.
⑥ 0 V in the REC mode only and 4.2 V in the other modes.
⑦ 0 V in the REC mode only and 4.2 V in the other modes.
⑧ 4.1 V in the REC mode only and 0 V in the other modes.
⑨ 5.9 V
⑩ 0 V
⑪ 0 V
⑫ STOP. 6 V in the other modes.

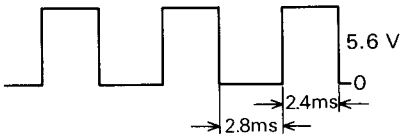


Fig. 16

⑬ Same staircase waveform as ⑫ in the FF/REW mode and 6 V in the other modes.
⑭ Same staircase waveform as ⑫ in the PB/REC mode
⑮

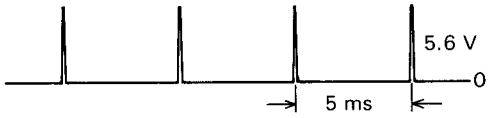


Fig. 17

⑯

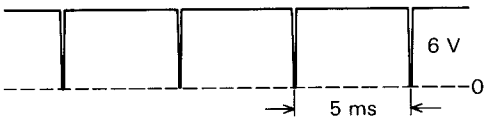


Fig. 18

⑰ Same as ⑯.
⑱ Same as ⑯.
⑲

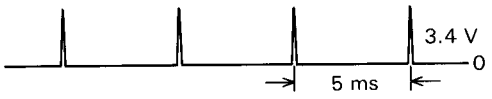


Fig. 19

⑳ 0 V
㉑ 0 V
㉒

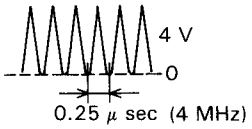


Fig. 20

㉓ Same as ㉒.
㉔ 5.8 V
㉕

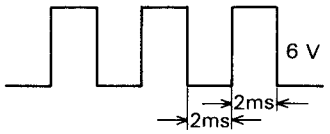


Fig. 21

㉖ Same as ㉕.
㉗ 0 V
㉘ 0 V
㉙ 0 V
㉚ 0 V
㉛ 0 V
㉜

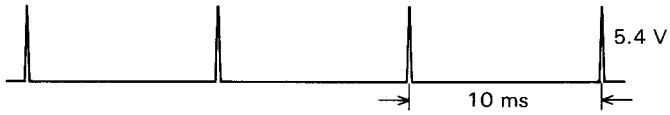


Fig. 22

㉝ 4.6 V
㉞ 4.6 V
During cam rotation only, the either pin is 0 V.
㉟ 4.6 V only during the REW (scan) mode and 0 V during other modes.
㊱ 4.6 V only during the FF (scan) mode and 0 V during other modes.
㊲ PB/REC

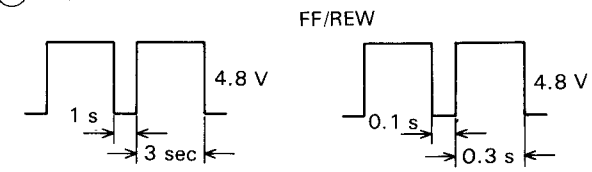


Fig. 23

STOP 4.8 V
㊳ Same as ㊲.
㊴ Same as ㊲.

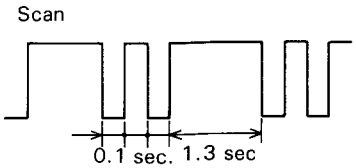


Fig. 24

㊵ 0 V in REC mode and 5 V in other modes.
㊶ 6 V
㊷ PB/REC

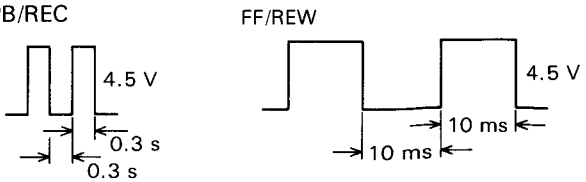


Fig. 25

STOP 0 V

Block Diagram

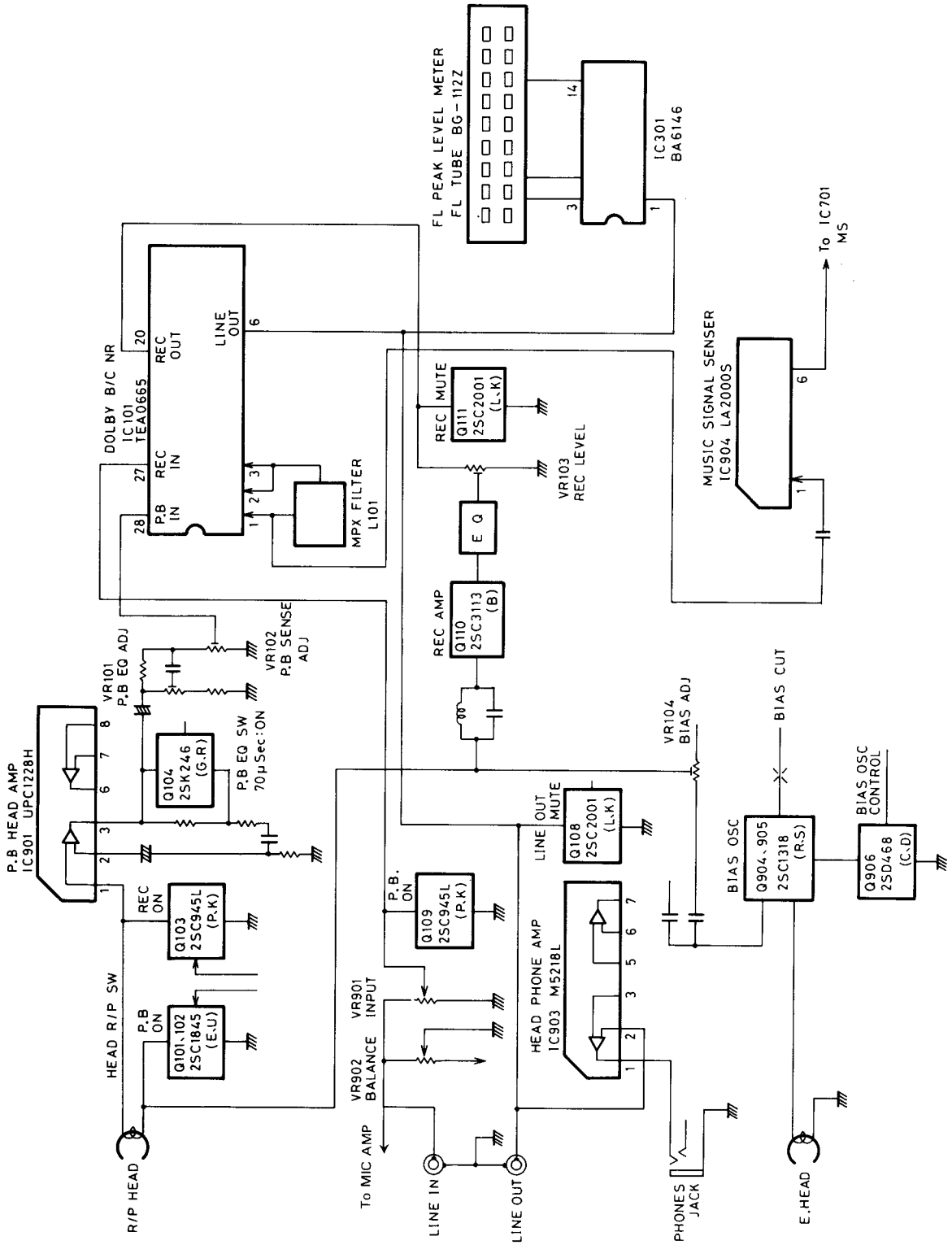


Fig. 26

Wiring Connections (1)

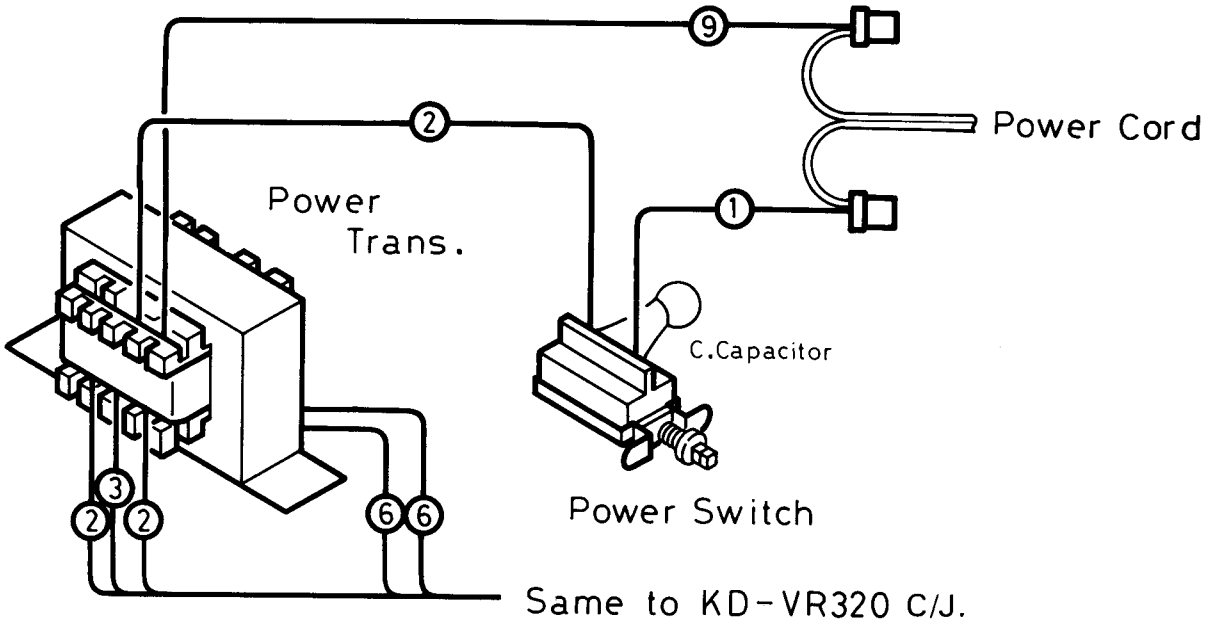


Fig. 27

Wiring Connections (2)

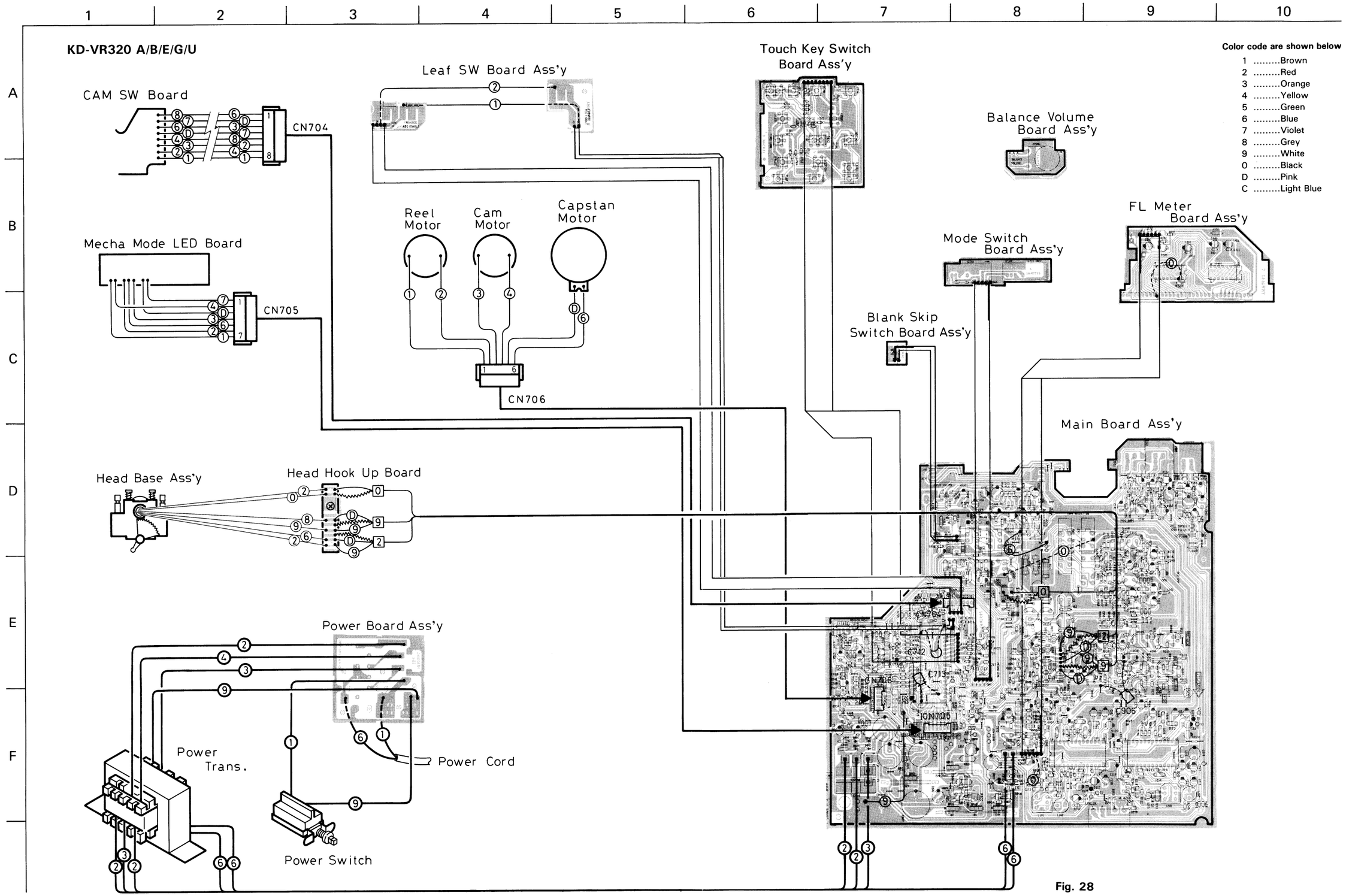
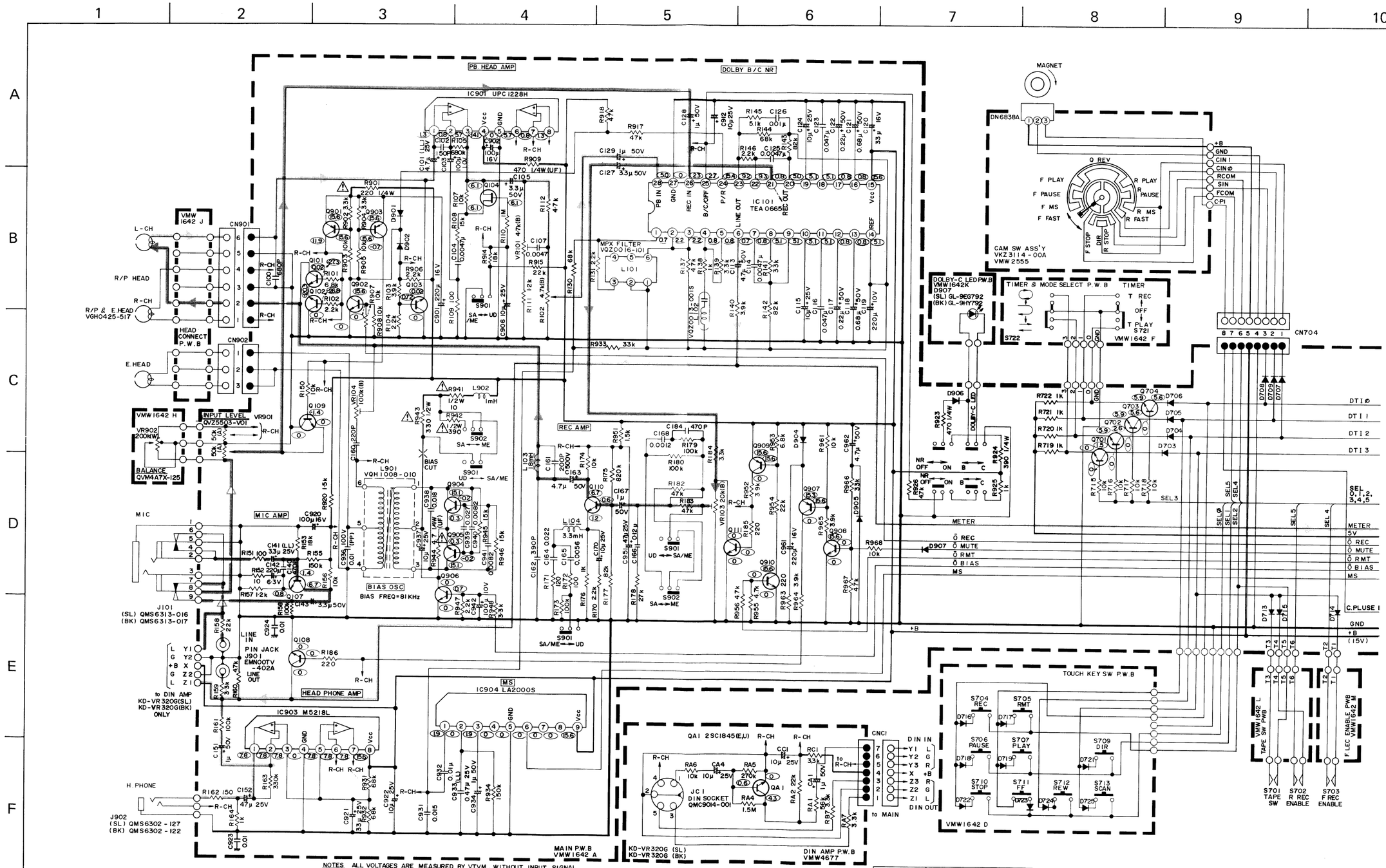


Fig. 28

Standard Schematic Diagram of KD-VR320 (Amplifier Circuit)



NOTES ALL VOLTAGES ARE MEASURED BY VTVM, WITHOUT INPUT SIGNAL.
(MODE: REC, METAL, NR OFF)
UNLESS OTHERWISE SPECIFIED, ALL RESISTORS ARE 1/6W, ±5% CARBON RESISTOR.
ALL CAPACITORS ARE 50V CERAMIC CAPACITOR OR 50V MYLAR CAPACITOR.
ALL DIODES, UNLESS OTHERWISE SPECIFIED, ARE MA165

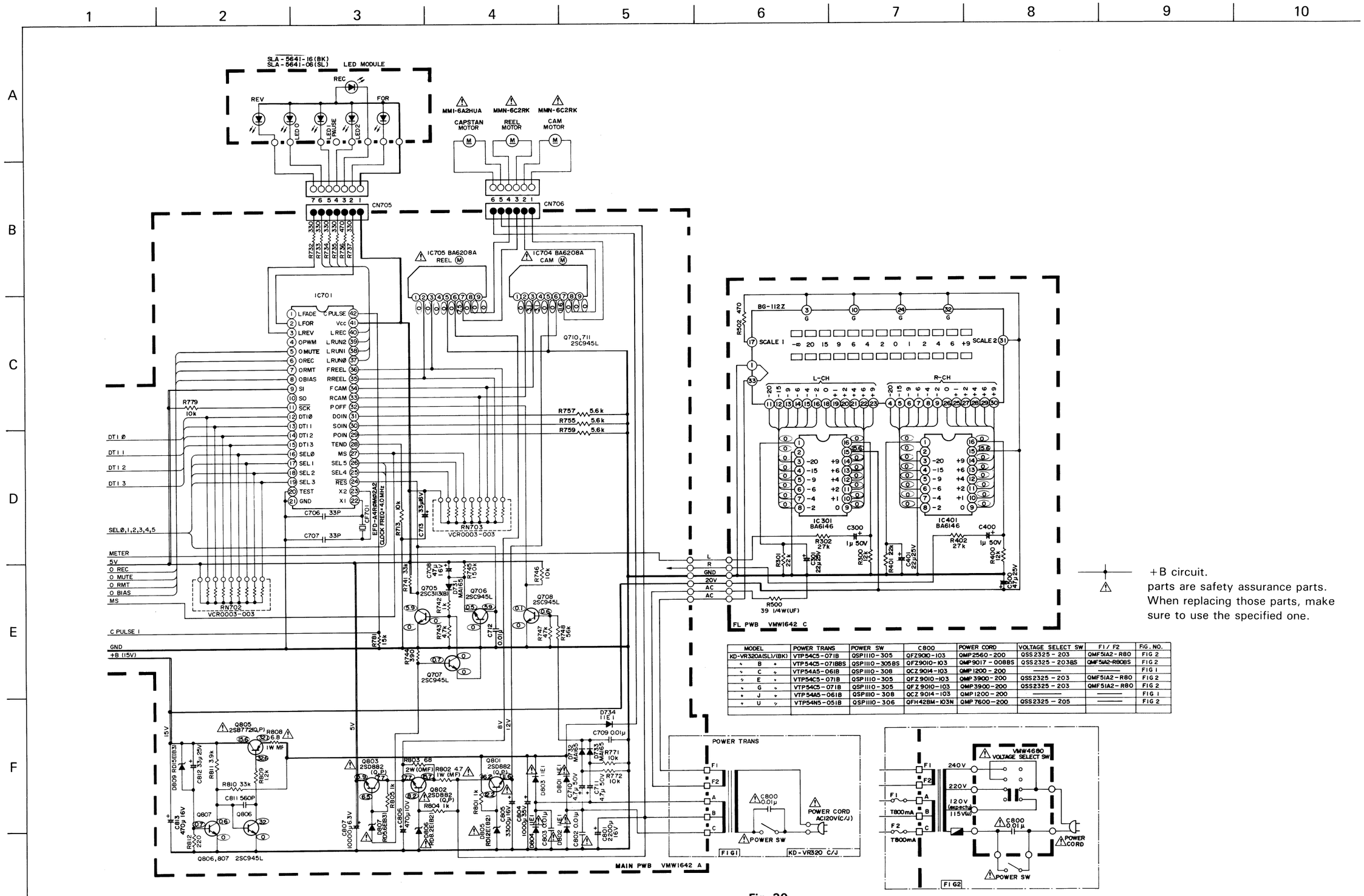
(UF) UNFLAMBLE CARBON RESISTOR (OMF) OXIDED METAL FILM RESISTOR
(LL) LOW LEAK CURRENT E CAPACITOR (PP) POLYPROPYLENE CAPACITOR

2SC1318(R,S)	Q904,905
2SD468(B,C)	Q906
2SC3113(B)	Q110,210,705
2SC1354(E,F)	Q107,207
2SK246(GR)	Q104,204
2SC1845(E,U)	Q101,102,201,202,QA1,QA2
2SC945L(P,K)	Q103,109,203,209 Q701,702,703,704,706,707 Q708,902,908,910,806,807
2SA992(E,U)	Q901
2SA733A(P,K)	Q903,907,909
2SC2001(L,K)	Q108,111,208,211

Blue line shows the signal at playback.
Red line shows the signal at recording.
+B circuit.
⚠ parts are safety assurance parts. When replacing those parts, make sure to use the specified one.

Fig. 29

Standard Schematic Diagram of KD-VR320 (Mechacon Circuit)



MODEL	POWER TRANS	POWER SW	C800	POWER CORD	VOLTAGE SELECT SW	F1 / F2	FIG. NO.
KD-VR320A(SL)/(BK)	VTP54C5-071B	QSP1110-305	QFZ9010-103	QMP2560-200	QSS2325-203	QMF5IA2-R80	FIG 2
〃 B 〃	VTP54C5-071BBS	QSP1110-305BS	QFZ9010-103	QMP9017-008BS	QSS2325-203BS	QMF5IA2-R80BS	FIG 2
〃 C 〃	VTP54A5-061B	QSP1110-308	QCZ9014-103	QMP1200-200	——	——	FIG 1
〃 E 〃	VTP54C5-071B	QSP1110-305	QFZ9010-103	QMP3900-200	QSS2325-203	QMF5IA2-R80	FIG 2
〃 G 〃	VTP54C5-071B	QSP1110-305	QFZ9010-103	QMP3900-200	QSS2325-203	QMF5IA2-R80	FIG 2
〃 J 〃	VTP54A5-061B	QSP1110-308	QCZ9014-103	QMP1200-200	——	——	FIG 1
〃 U 〃	VTP54N5-051B	QSP1110-306	QFH42BM-103N	QMP7600-200	QSS2325-205	——	FIG 2

+B circuit.
parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

Fig. 30

P.C. Board Parts (#1 ~ 9500) (Pattern side)

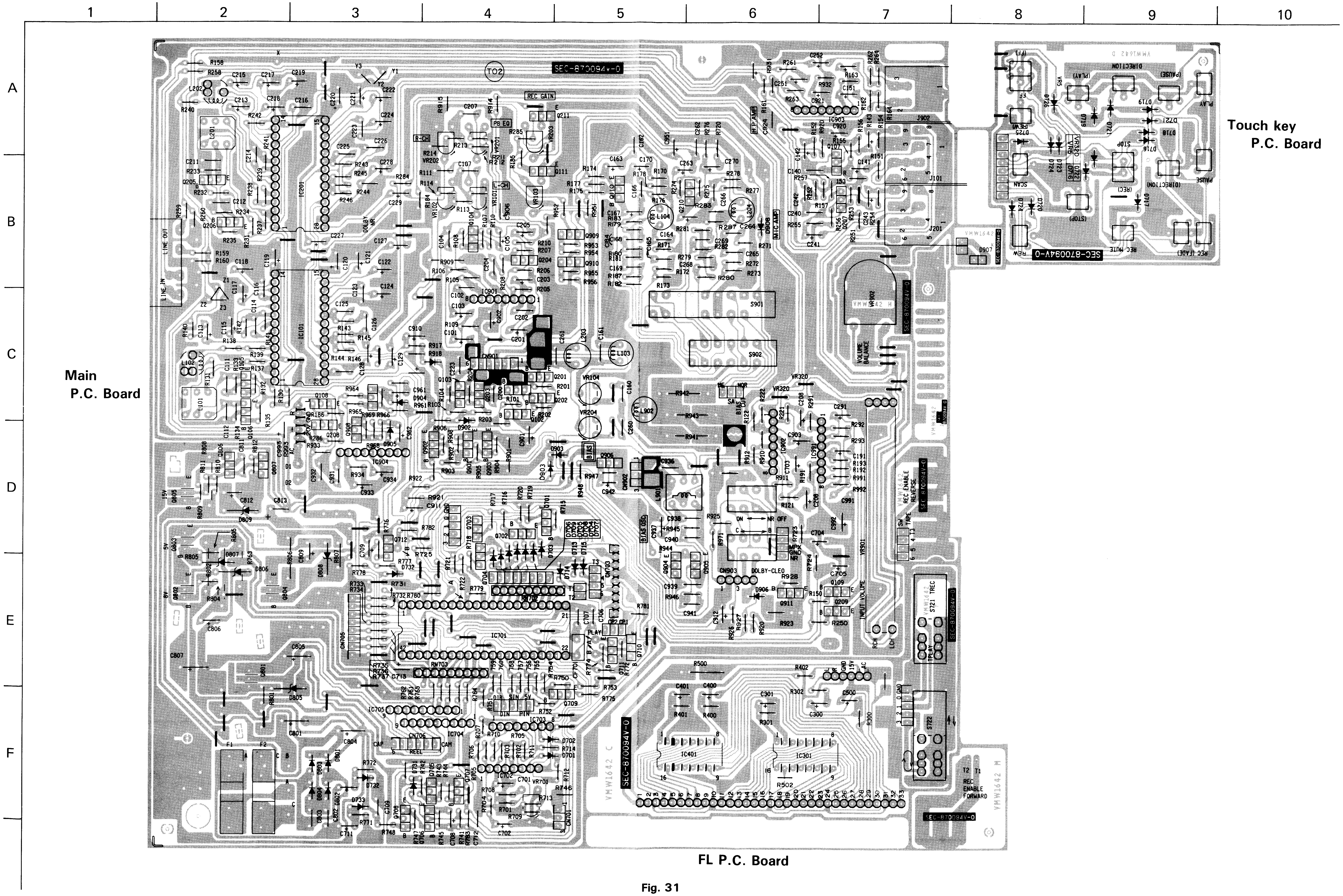


Fig. 31

P.C. Board Parts (#9501~)

(Pattern side)

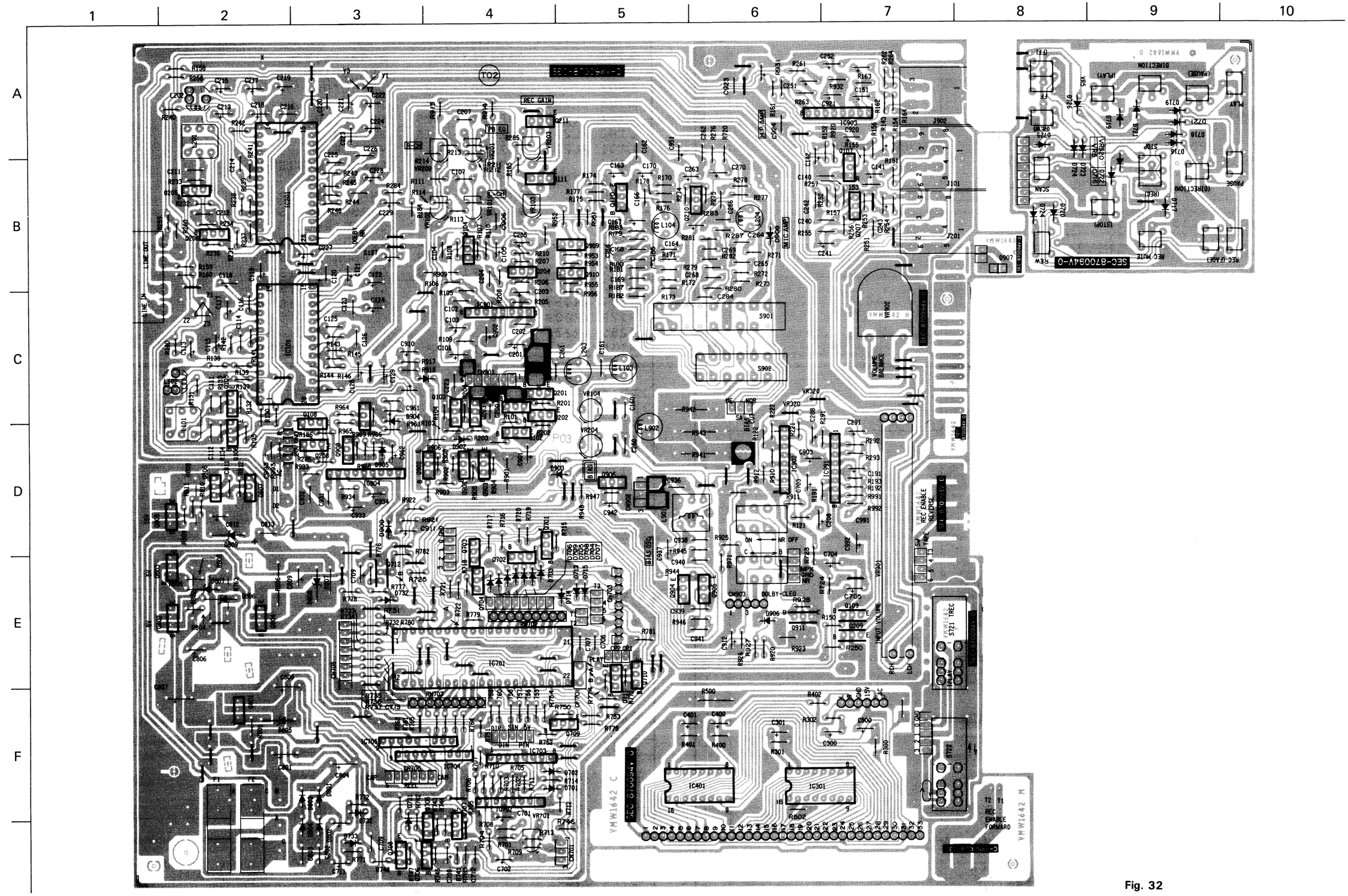


Fig. 32

P.C. Board Parts List

⚠ parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

⚠	REF. NO	PARTS NO.	PARTS NAME	REMARKS	QTY
	IC301,IC401	BA6146	I.C. (M)	FL DRIVE	2
⚠	IC704,IC705	BA6208A	I.C.		2
	IC904	LA2000S	I.C.		1
	IC903	M5218L	I.C.		1
	IC101,IC201	TEA0665	I.C.		2
	IC901	UPC1228H	I.C.		1
	IC701	UPD1511AC-072	IC	MECHA.CONTROL	1
	Q903 ,Q907	2SA733A(P,K)	TRANSISTOR		3
	Q909				
	Q901	2SA992(E,U)	TRANSISTOR		1
⚠	Q805	2SB772(Q,P)	TRANSISTOR		1
	Q904 ,Q905	2SC1318(R,S)	TRANSISTOR		2
	Q107 ,Q207	2SC1344(E,F)	TRANSISTOR		2
	Q101 ,Q102	2SC1845(E,U)	TRANSISTOR		4
	Q201 ,Q202				
	Q108 ,Q111	2SC2001(L,K)	TRANSISTOR		4
	Q208 ,Q211				
	Q110 ,Q210	2SC3113(B)E4	TRANSISTOR		3
	Q705				
	Q103 ,Q109	2SC945L(P,K)	TRANSISTOR		16
	Q203 ,Q209				
	Q701 -Q704				
	Q706 -Q708				
	Q806 ,Q807				
	Q902 ,Q908				
	Q910				
	Q906	2SD468(B,C)	TRANSISTOR		1
⚠	Q801 -Q803	2SD882(Q,P)	TRANSISTOR		3
	Q104 ,Q204	2SK246(GR)E2	FET		2
	D703 -D709	MA165	SI.DIODE		28
	D713 -D719				
	D721 -D725				
	D731 -D733				
	D901 ,D902				
	D904 -D907				
⚠	D805	RD12E(B2)	Z.DIODE		1
⚠	D809	RD15E(B3)	Z DIODE		1
⚠	D807	RD5.6E(B3)	Z.DIODE		1
⚠	D806	RD8.2E(B2)	Z DIODE		1
⚠	D734 ,D801	11E1-TB2	SI DIODE		5
⚠	D802 -D804				
	VR902	QVM4A7X-125	V.RESISTOR		1
	VR104,VR204	QVP4A0B-104	V.RESISTOR		2
	VR103,VR203	QVZ1802-223M	V.RESISTOR		2
	VR101,VR102	QVZ1802-472M	V RESISTOR		4
	VR201,VR202				
	VR901	QVZ5503-V01	V.RESISTOR		1
	CN703	QMV5005-004	CONNECTOR		1
	CN706	QMV5005-006	PLUG		1
	CN705	QMV5005-007	CONNECTOR		1
	S704 -S707	QSP0301-002	PUSH SWITCH		9
	S709 -S713				
	S721 ,S722	QSS2301-102	SLIDE SWITCH		2
	S901	QST4243-V01	PUSH SWITCH		1

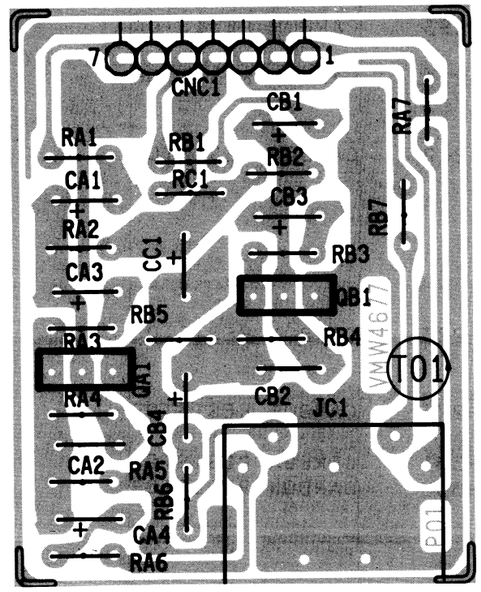
⚠	REF. NO	PARTS NO.	PARTS NAME	REMARKS	QTY
	S902	QST4243-V02	PUSH SWITCH		1
	L901	VQH1008-010	OSC COIL		1
	L902	VQP0001-102	INDUCTOR		1
	L103 ,L203	VQP0001-183	INDUCTOR		2
	L104 ,L204	VQP0001-332S	INDUCTOR		2
	L102 ,L202	VQZ0013-001S	FILTER		2
	L101 ,L201	VQZ0016-101	FILTER		2
	R806	QRD129J-220	CARBON RESISTOR		1
⚠	R942 ,R943	QRD129J-271	C RESISTOR		2
⚠	R500	QRD129J-390	OMF.RESISTOR		1
⚠	R941	QRD129J-4R7	CARBON RESISTOR		1
	R924	QRD141J-391	C RESISTOR		1
⚠	R901	QRD149J-221S	CARBON RESISTOR		1
⚠	R944	QRD149J-4R7S	CARBON RESISTOR		1
⚠	R909 ,R923	QRD149J-471S	CARBON RESISTOR		2
	R152 ,R252	QRD161J-100	CARBON RESISTOR		2
	R109 ,R151	QRD161J-101	CARBON RESISTOR		6
	R172 ,R209				
	R251 ,R272				
	R138 ,R164	QRD161J-102	CARBON RESISTOR		15
	R176 ,R238				
	R264 ,R276				
	R719 -R722				
	R742 ,R801				
	R804 ,R805				
	R925				
	R150 ,R156	QRD161J-103	CARBON RESISTOR		25
	R174 ,R250				
	R256 ,R274				
	R713 ,R715				
	R716 -R718				
	R746 ,R761				
	R762 ,R764				
	R765 ,R771				
	R772 ,R779				
	R903 ,R905				
	R907 ,R908				
	R961 ,R968				
	R154 ,R161	QRD161J-104	CARBON RESISTOR		6
	R173 ,R254				
	R261 ,R273				
	R110 ,R210	QRD161J-105	CARBON RESISTOR		2
	R111 ,R157	QRD161J-122	CARBON RESISTOR		5
	R211 ,R257				
	R809				
	R107 ,R207	QRD161J-123	CARBON RESISTOR		4
	R300 ,R400				
	R162 ,R262	QRD161J-151	CARBON RESISTOR		2
	R920 ,R951	QRD161J-152	CARBON RESISTOR		2
	R108 ,R208	QRD161J-153	CARBON RESISTOR		5
	R781 ,R945				
	R946				
	R155 ,R180	QRD161J-154	CARBON RESISTOR		6
	R255 ,R280				
	R745 ,R934				

⚠	REF. NO	PARTS NO.	PARTS NAME	REMARKS	QTY
	R153 ,R253 R914	QRD161J-183	CARBON RESISTOR		3
	R185 ,R186 R285 ,R286 R812 ,R963	QRD161J-221	CARBON RESISTOR		6
	R102 ,R104 R131 ,R146 R170 ,R202 R204 ,R231 R246 ,R270	QRD161J-222	CARBON RESISTOR		13
	R780 ,R906 R947 R158 ,R258 R301 ,R401 R915 ,R954	QRD161J-223	CARBON RESISTOR		6
	R178 ,R278 R302 ,R402	QRD161J-273	CARBON RESISTOR		4
	R732 -R736	QRD161J-331	CARBON RESISTOR		5
	R139 ,R140 R159 ,R184	QRD161J-332	CARBON RESISTOR		11
	R239 ,R240 R259 ,R284 R902 ,R904 R948 R141 ,R241	QRD161J-333	CARBON RESISTOR		6
	R741 ,R810 R933 ,R966 R163 ,R263	QRD161J-334	CARBON RESISTOR		2
	R744	QRD161J-391	CARBON RESISTOR		1
	R103 ,R203	QRD161J-392	CARBON RESISTOR		6
	R811 ,R952 R964 ,R965 R179 ,R182 R279 ,R282 R502 ,R737	QRD161J-393	CARBON RESISTOR		4
	R112 ,R137 R160 ,R212 R237 ,R260 R743 ,R955 R956	QRD161J-471	CARBON RESISTOR		2
	R183 ,R283 R747 ,R917 R918 ,R926 R967 R145 ,R245	QRD161J-472	CARBON RESISTOR		9
	R171 ,R271	QRD161J-473	CARBON RESISTOR		7
	R755 ,R757 R759	QRD161J-512	CARBON RESISTOR		2
	R748	QRD161J-560	CARBON RESISTOR		2
	R101 ,R201	QRD161J-562	CARBON RESISTOR		3
	R953 R130 ,R144 R230 ,R244 R931 ,R932 R105 ,R205	QRD161J-563	CARBON RESISTOR		1
		QRD161J-682	CARBON RESISTOR		3
		QRD161J-683	CARBON RESISTOR		6
		QRD161J-684	CARBON RESISTOR		2

⚠	REF. NO	PARTS NO.	PARTS NAME	REMARKS	QTY
	R142 ,R143 R177 ,R242 R243 ,R277	QRD161J-823	CARBON RESISTOR		6
	R175 ,R275	QRD161J-824	CARBON RESISTOR		2
⚠	R803	QRG029J-680	OMF.RESISTOR		1
⚠	R802	QRX019J-4R7	M.F.RESISTOR		1
⚠	R808	QRX019J-6R8	M.F.RESISTOR		1
	RN701-RN703	VCR0003-003	C.R.BLOCK		3
	CF701	EFO-A4R0M02A2	LOCK		1
⚠	C712 ,C802	QCF11HP-103	C CAPACITOR		5
⚠	C803 ,C923 C924				
	C102 ,C202	QCS11HJ-151	C.CAPACITOR		2
	C160 ,C260	QCS11HJ-221	C.CAPACITOR		2
	C706 ,C707	QCS11HJ-330	C.CAPACITOR		2
	C162 ,C262	QCS11HJ-391	C.CAPACITOR		2
	C140 ,C240	QCS11HJ-471	C.CAPACITOR		2
	C811	QCS11HJ-561	C.CAPACITOR		1
	C100 ,C200	QCS11HJ-681	C.CAPACITOR		2
	C161 ,C261	QCS12HJ-201	C.CAPACITOR		2
	C141 ,C241	QEB41EM-335	LLC E CAPACITOR		2
	C101 ,C201	QEB41EM-475	E.CAPACITOR		2
	C933	QEB41HM-474	LLC E CAPACITOR		1
	C103 ,C203 C942	QET41AR-107	E CAPACITOR		3
	C807	QET41AR-109	E.CAPACITOR		1
	C119 ,C142 C219 ,C242	QET41AR-227	E CAPACITOR		4
	C806	QET41AR-477	E CAPACITOR		1
	C901 ,C961	QET41CM-227	E CAPACITOR		2
	C902 ,C920 C301 ,C401	QET41CR-107	E CAPACITOR		2
⚠	C801	QET41CR-226	E CAPACITOR		2
	C713	QET41CR-228	E.CAPACITOR		1
⚠	C805	QET41CR-336	E.CAPACITOR		1
	C152 ,C252 C500 ,C708 C951	QET41CR-338	E CAPACITOR		1
	C813	QET41CR-476	E CAPACITOR		5
	C115 ,C124	QET41CR-477	E CAPACITOR		1
	C170 ,C215 C224 ,C270 C906 ,C912 C922 ,C937	QET41ER-106	E.CAPACITOR		10
	C120 ,C220	QET41ER-336	E CAPACITOR		4
	C812 ,C921 C128 ,C129 C151 ,C167 C228 ,C229 C251 ,C267	QET41HR-105	E.CAPACITOR		11
	C300 ,C400 C934				
	C117 ,C122 C217 ,C222	QET41HR-224	E.CAPACITOR		4
	C105 ,C127	QET41HR-335	E.CAPACITOR		6

⚠	REF. NO	PARTS NO.	PARTS NAME	REMARKS	QTY
	C143 ,C205				
	C227 ,C243				
	C113 ,C163	QET41HR-475	E.CAPACITOR		7
	C213 ,C263				
	C710 ,C711				
	C962				
	C118 ,C121	QET41HR-684	E CAPACITOR		4
	C218 ,C221				
	C804	QET41VR-108	E CAPACITOR		1
	C168 ,C268	QFN41HJ-122	M.CAPACITOR		2
	C104 ,C107	QFN41HJ-472	M.CAPACITOR		8
	C114 ,C125				
	C204 ,C207				
	C214 ,C225				
	C165 ,C265	QFN41HJ-562	M.CAPACITOR		2
	C940 ,C941	QFN41HJ-822	M.CAPACITOR		2
	C936	QFP42AJ-103	P.P.CAPACITOR		1
	C126 ,C226	QFV41HJ-103	TF.CAPACITOR		4
	C709 ,C931				
	C166 ,C266	QFV41HJ-124	TF CAPACITOR		2
	C932	QFV41HJ-153	TF CAPACITOR		1
	C938	QFV41HJ-183	TF.CAPACITOR		1
	C164 ,C264	QFV41HJ-223	TF.CAPACITOR		2
	C939	QFV41HJ-273	TF CAPACITOR		1
	C116 ,C123	QFV41HJ-473	TF.CAPACITOR		4
	C216,223				
	J901	EMN00TV-402A	PIN JACK		1
⚠	—	QMF51A2-R80	FUSE	KD-VR320 A/E/G/U	2
⚠	—	QMF51A2-R80BS	FUSE	KD-VR320 B	2
⚠	—	TAZ000331-02	FUSE CLIP	KD-VR320 A/B/E/G/U	4
⚠	—	VND4003-038	FUSE LABEL	KD-VR320 A/B/E/G/U	2
	Power Transformer Section				
⚠		TAW000504-01	CONNECTOR	KD-VR320 C/J	2
⚠	C800	QFZ9010-103	MP. CAPACITOR		1
⚠	C800	QCZ9014-103	C. CAPACITOR	KD-VR320 C/J	1
⚠	C800	QFH42BM-103M	M. CAPACITOR	KD-VR320 U	1
	J902	QMS6302-122	PHONES JACK	BLACK	1
	J902	QMS6302-127	PHONES JACK	SILVER	1
	J101,201	QMS6313-017	MIC JACK	BLACK	2
	J101,201	QMS6313-016	MIC JACK	SILVER	2
	D907	GL-9HY792	LED	BLACK, FOR DOLBY C	1
	D907	GL-9EG792	LED	SILVER, FOR DOLBY C	1

DIN Circuit P.C Board (KD-VR320 G)



IC & Transistor
Earth pattern

Fig. 33

DIN Circuit P.C. Board Parts List (KD-VR320 G)

⚠ parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

⚠	REF. NO	PARTS NO.	PARTS NAME	REMARKS	QTY
	QA1 ,QB1	2SC1845(E,U)	TRANSISTOR	KD-VR320G DIN	2
	CNC1	QMV5004-007	CONNECTOR		1
	RA6 ,RB6	QRD141J-103	CARBON RESISTOR	KD-VR320G DIN	2
	RA4 ,RB4	QRD141J-155	C RESISTOR	KD-VR320G DIN	2
	RA2 ,RB2	QRD141J-223	CARBON RESISTOR	KD-VR320G DIN	2
	RA5 ,RB5	QRD141J-274	C RESISTOR	KD-VR320G DIN	2
	RA7 ,RB7	QRD141J-332	C RESISTOR	KD-VR320G DIN	3
	RC1				
	RA1 ,RB1	QRD141J-563	C RESISTOR	KD-VR320G DIN	2
	CA2 ,CB2	QCS11HJ-100	C.CAPACITOR	KD-VR320G DIN	2
	CA4 ,CB4	QET41ER-106	E CAPACITOR	KD-VR320G DIN	3
	CC1				
	CA1 ,CB1	QET41HR-105	E.CAPACITOR	KD-VR320G DIN	2
	JC1	QMC9014-007	DIN SOCKET	KD-VR320G	1

Exploded View of Mechanism Assembly

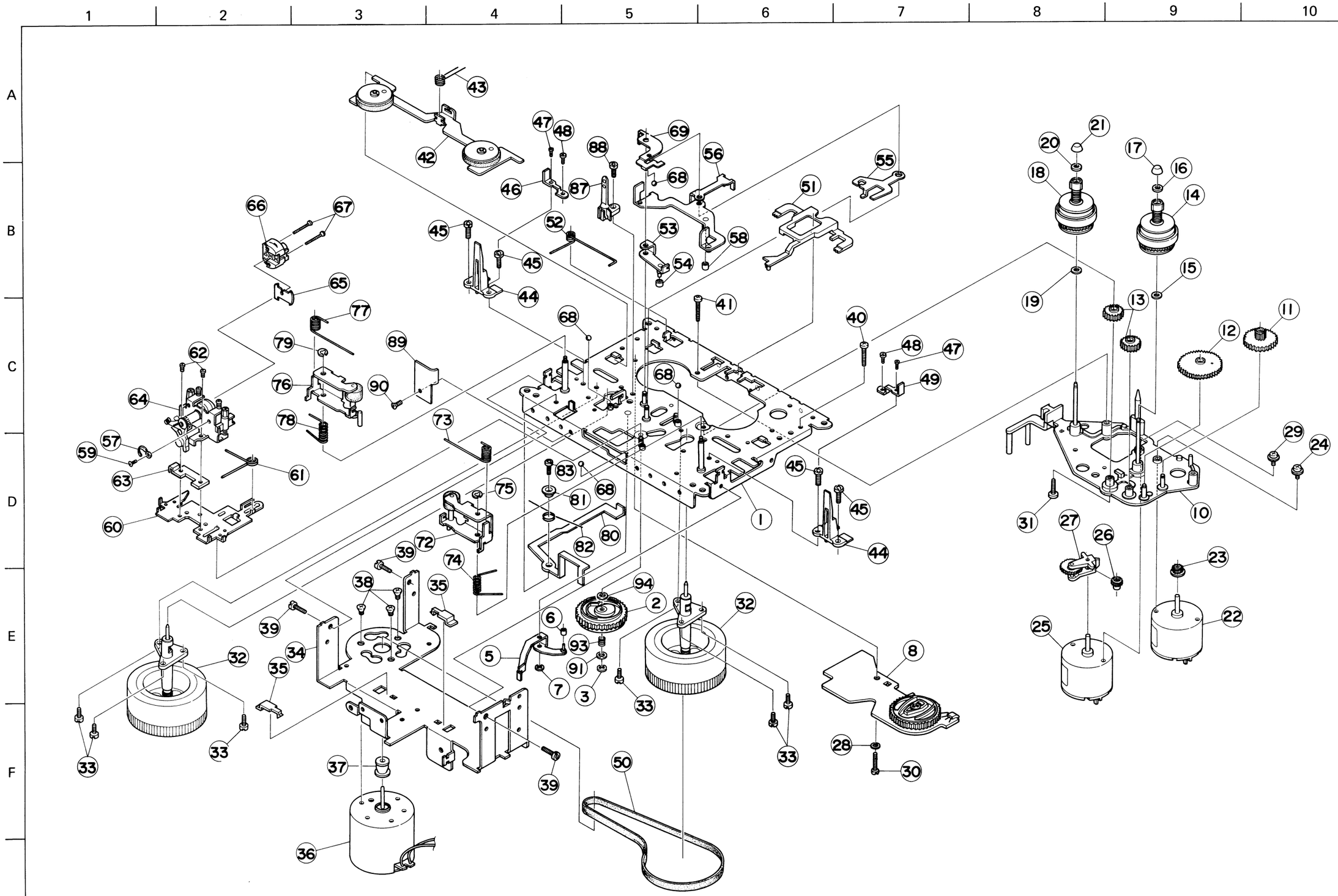


Fig. 34

Mechanism Assembly Parts List

⚠ parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY
	1	VKL2170-00D	C.BASE ASS'Y		1
	2	VKS2122-001	P.ROLLER CAM		1
	3	VKZ4283-001	SPECIAL E RING	P.ROLLER CAM	1
	4	Q03093-834	WASHER		1
	5	VKL5333-00B	HEAD LEVER		1
	6	VKH3000-058	COLLAR		1
	7	REE1500	E.RING		1
	8	VKZ3114-00B	CAM SW.ASS'Y		1
	10	VKL2173-00B	DISK B.ASS'Y		1
	11	VKR3001-001	GEAR(2)		1
	12	VKR3001-002	GEAR(2)		1
	13	VKR3000-001	GEAR(1)		2
	14	VKR4312-00A	TAKE UP DISK(1)		1
	15	VKZ4003-010	FELT	BACK TENSION	1
	16	VKR4170-001	RING		1
	17	VKS4131-001	REEL STOPPER		1
	18	VKR4319-00A	TAKE UP DISK(4)		1
	19	VKZ4003-010	FELT		1
	20	VKR4170-001	RING		1
	21	VKS4131-001	REEL STOPPER		1
⚠	22	MMN-6C2RK	DC MOTOR		1
	23	VKR4326-001	MOTOR GEAR		1
	24	DPSP2608Z	SCREW		1
⚠	25	MMN-6C2RK	DC MOTOR		1
	26	VKR3000-003	GEAR(1)	REEL MOTER	1
	27	VKS4503-00C	F/R ASS'Y		1
	28	WNS2600N	WASHER		1
	29	DPSP2608Z	SCREW		1
	30	HPST2612Z	SCREW		1
	31	HDST2608Z	SCREW		1
	32	VKF3123-00D	FLY WHEEL		2
	33	HPST2605Z	SCREW		6
	34	VKL3410-008	BRACKET		1
	35	VKS4437-001	THRUST PLATE		2
⚠	36	MMI-6A2HUA	MOTOR	CAPSTAN	1
	37	VKR4317-002	MOTOR PULLEY		1
	38	SSSP2604Z	SCREW		3
	39	HDST2605Z	SCREW		3
	40	SPSP2615Z	SCREW		1
	41	SPSP2613Z	SCREW		1
	42	VKL3411-00A	TAKE UP IDLER		1
	43	VKW3006-099	SPRING		1
	44	VKS4505-004	GUIDE		2
	45	HDST2606Z	SCREW		4
	46	VKL5627-003	GUID LEVER		1
	47	VKZ4032-001	SPECIAL SCREW		2
	48	SDST2004Z	SCREW		2
	49	VKL5627-004	GUID LEVER		1
	50	VKB3001-017	CAPSTAN BELT		1
	51	VKS3162-003	BRAKE BAR		1
	52	VKW4380-001	SPRING		1
	53	VKL5316-00B	HEAD BASE ARM		1
	54	VKH3000-058	COLLAR		1
	55	VKL5318-001	ARM		1
	56	VKL3413-00A	LEVER ASS'Y	PINCH ROLLER	1
	57	VKZ4001-013	WIRE HOLDER		1
	58	VKH3000-058	COLLAR		1
	59	SPSH2018M	SCREW		1
	60	VKL3415-007	BASE		1
	61	VKW4467-001	SPRING		1
	62	SPSH2050M	SCREW		2
	63	VKS4762-001	SPACER		1
	64	VKL3598-00B	HEAD MOUNT BASE		1
	65	VKZ4216-001	STOPPER		1
	65-1	V44743-001	MONOHIRA		1
		V44743-001	MONOHIRA	FOR WIRE	1
	66	VGH0425-514	R/P&E HEAD		1
	67	VKZ4223-001	SCREW		2
	68	T41615-004	STEEL BALL		4
	69	VKY4278-002	PLATE		1
	72	VKP4162-00A	ARM ASS'Y (R)	PINCH ROLLER	1
	73	VKW3006-056	SPRING		1
	74	VKW3006-057	SPRING		1
	75	REE2500	E.WASHER		1
	76	VKP4164-00A	ARM ASS'Y (L)	PINCH ROLLER	1
	77	VKW3006-059	SPRING		1
	78	VKW3006-060	SPRING		1
	79	REE2500	E.WASHER		1
	80	VKL5320-002	DOOR SAFETY(1)		1
	81	VKH4418-001	FLANGE COLLAR		1
	82	VKW3006-061	SPRING		1
	83	HPST2605Z	SCREW		1
	84	VKY4279-001	PACK SPRING		1
	85	SDST2606Z	SCREW	FOR PACK SPRING	2
	86	HDST2605Z	SCREW		1
	87	VKS4512-002	GUIDE POST		1
	88	HDST2605Z	SCREW		1
	89	VKL5398-001	BRACKET		1
	90	SSST2605Z	SCREW		1
	91	VKZ4284-001	WASHER	P.ROLLEA CAM	1
	93	VKW3001-159	SPRING	P.ROLLER CAM	1
	94	VKZ4003-011	C.WASHER	P.ROLLER CAM	1

Exploded View of Enclosure Assembly

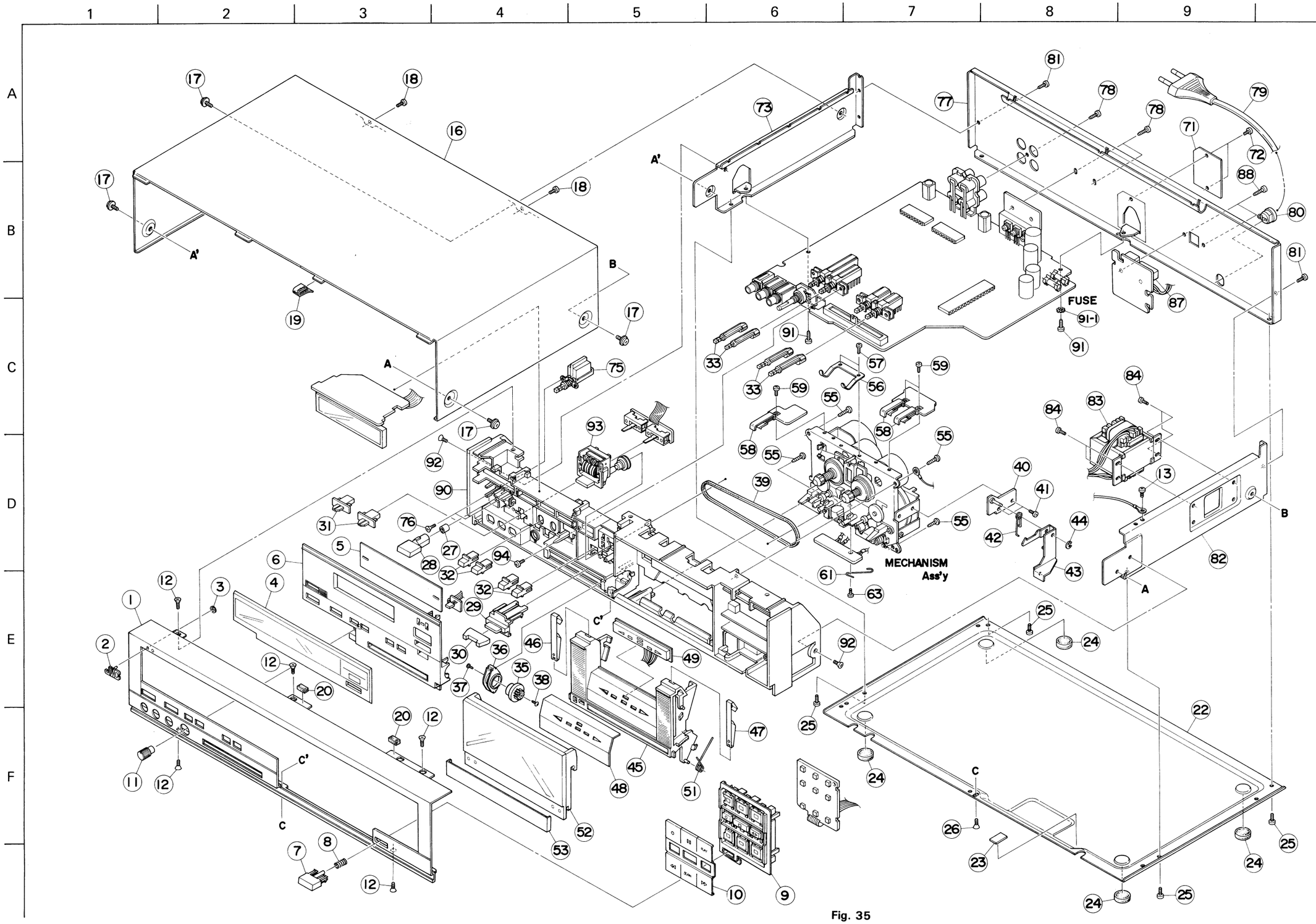


Fig. 35

Enclosure Assembly Parts List

⚠ parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

⚠	Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
		QMF51A2-R80BS	Fuse	KD-VR320 B	2
	1~6,9,10	ZCKDVR320-FSL	Front Plate Ass'y	Silver	1
	〃	〃 -FBK	〃	Black	1
	1	VJC1416-001	Front Plate	Silver	1
	〃	〃 -002	〃	Black	1
	2	E70913-002	JVC Mark	Silver	1
	〃	〃 -001	〃	Black	1
	3	NSS2000Z	Special Nut		1
	4	VJK3303-001	Finder		1
	5	VJD4924-001	Filter	Silver	1
	〃	〃 -002	〃	Black	1
	6	VJD2251-001	Escutcheon	Silver	1
	〃	〃 -002	〃	Black	1
	7	VXP4349-00A	Eject Button Ass'y	Black	1
	〃	〃 -00B	〃	Silver	1
	8	VKW3001-063	Spring		1
	9	VJD3533-001	Escutcheon	Silver	1
	10	VJD4888-001	Button Plate		1
	11	VXL4181-001	Balance Vol. Knob	Silver	1
	〃	〃 -005	〃	Black	1
	12	SSSF3008Z	Screw	Front Plate	6
	13	SDST3006Z	〃		2
	14	QHX2075-001	Wire Clamp		4
	15	QHX2145-001	〃		1
	16	VJC2101-001	Top Cover	Silver	1
	〃	〃 -005	〃	Black	1
	17	VKZ3001-002	Special Screw	Silver	4
	〃	〃 -004	〃	Black	4
	18	SDST3006N	Screw		2
	19	VYSA1R8-027	Spacer		1
	21	F00303-34	〃	For Head Wire	1
	22	VJC1195-008	Bottom Cover		1
	23	VYSS101-014	Spacer		1
	24	VJF4003-002	Foot		4
	25	SDST3004Z	Screw		4
	26	SBSF3008Z	T. Screw		1
	27	VKS4003-014	Pipe		1
	28	VXP4345-001	Push Button		1
	29	VKS4783-001	Slide Lever	Silver	1
	〃	〃 -002	〃	Black	1
	30	VXS4145-001	Slide Knob	Silver	1
	〃	〃 -002	〃	Black	1
	31	VXS4041-005	Slide Knob		1
	〃	〃 -005	〃		1
	32	VXP4346-001	Push Button		4
	33	VKS4634-001	Bar		4
	35	VYH5133-002	Gear		1
	36	VYH5134-002	Damper Holder		1
	37	SPSK1720M	Screw		1
	38	SBSF2004Z	〃		1
	39	VKB3000-063	Counter Belt (R)		1
	40	VKL5324-00B	Bracket		1
	41	SDST2606Z	Screw	Eject BKT	2
	42	VKW4396-002	Spring		1
	43	VKL3534-001	Eject Lever		1
	44	REE2500	E. Washer		1
	45~48	ZCKDVR320-CH	Cassette Holder Ass'y		1
	45	VJT2100-002	Cassette Holder		1
	46	VKY4382-003	Cassette Spring	Left	1
	47	〃 -004	〃	Right	1
	48	VJD4870-002	LED Plate		1

⚠	Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	49	SLA-5641-06	LED Module	Silver	1
	〃	〃 -16	〃	Black	1
	51	VKW3006-124	Spring		1
	52,53	ZCKDVR320-CLSL	Cassette Lid Ass'y	Silver	1
	〃	〃 -CLBK	〃	Black	1
	52	VJT3144-001	Cassette Lid		1
	53	VJT4099-001	Lid Plate	Silver	1
	〃	〃 -002	〃	Black	1
	55	SBSF3010Z	Screw	Mecha.	4
	56	VKY4279-001	Spring		1
	57	SDST2606Z	Screw		2
	58	VSH1124-002	Leaf Switch		3
	59	SDST2605Z	Screw		3
	61	VKW4466-002	Spring		1
	63	SDST2606Z	Screw		1
⚠	71	VYN2148-002KA	Name Plate	KD-VR320 B	1
⚠	〃	〃 -003KA	〃	KD-VR320 A	1
⚠	〃	〃 -004KA	〃	KD-VR320 C	1
⚠	〃	〃 -005KA	〃	KD-VR320 E	1
⚠	〃	〃 -006KA	〃	KD-V320 J	1
⚠	〃	〃 -007KA	〃	KD-V320 U	1
⚠	〃	〃 -008KA	〃	KD-V320 G	1
	72	SDST3006N	Screw		2
	73	VKL3606-001	Amp. Chassis L	Left	1
⚠	75	QSP1110-305	Push Switch	KD-VR320 A/E/G	1
⚠	〃	〃 -305BS	〃	KD-VR320 B	1
⚠	〃	〃 -306	〃	KD-VR320 U	1
⚠	〃	〃 -308	〃	KD-VR320 C/J	1
	76	SSSP3006Z	Screw		2
	77	VJC2170-001	Rear Panel	KD-VR320 A/B/E/U	1
	〃	〃 -002	〃	KD-VR320 C/J	1
	〃	〃 -003	〃	KD-VR320 G	1
	78	SDSF3008N	Screw		2
⚠	79	QMP1200-200	Power Cord	KD-VR320 C/J	1
⚠	〃	QMP2560-200	〃	KD-VR320 A	1
⚠	〃	QMP3900-200	〃	KD-VR320 E/G	1
⚠	〃	QMP7600-200	〃	KD-VR320 U	1
⚠	〃	QMP9017-008BS	〃	KD-VR320 B	1
⚠	80	QHS3876-162	S.R. Bushing		1
⚠	〃	〃 -162BS	〃	KD-VR320 B	1
	81	SDST3006N	Screw		2
	82	VKL3607-001	Amp. Chassis (R)	Right	1
⚠	83	VTP54A5-061B	Power Transf.	KD-VR320 C/J	1
⚠	〃	VTP54C5-071B	〃	KD-VR320 A/E/G	1
⚠	〃	〃 -071BBS	Power Trans	KD-VR320 B	1
⚠	〃	VTP54U5-061B	〃	KD-VR320 U	1
	84	SDST3006N	Screw		4
⚠	87	QSS2325-203	Slide Switch	KD-VR320 A/E/G	1
⚠	〃	QSS2325-203BS	〃	KD-VR320 B	1
⚠	〃	QSS2325-205	Switch	KD-VR320 U	1
	88	SDST3006N	Screw	For V. Select	2
	90	VJC1415-001	Front Panel	Silver	1
	〃	〃 -002	〃	Black	1
	91	SDST3006Z	Screw		2
	92	SSST3006Z	〃		2
	93	VKC5182-001S	Counter		1
	95	VJD4906-002	Mecha. Plate	For F. Panel	1
	97	DPSP3008Z	Screw	For Heat Sink	3
		VMA4236-001	Shiled Plate	KD-VR320 G DIN P.C. B.	1
		E48729-002	Rivet	KD-VR320G DIN Socket	2

Packing

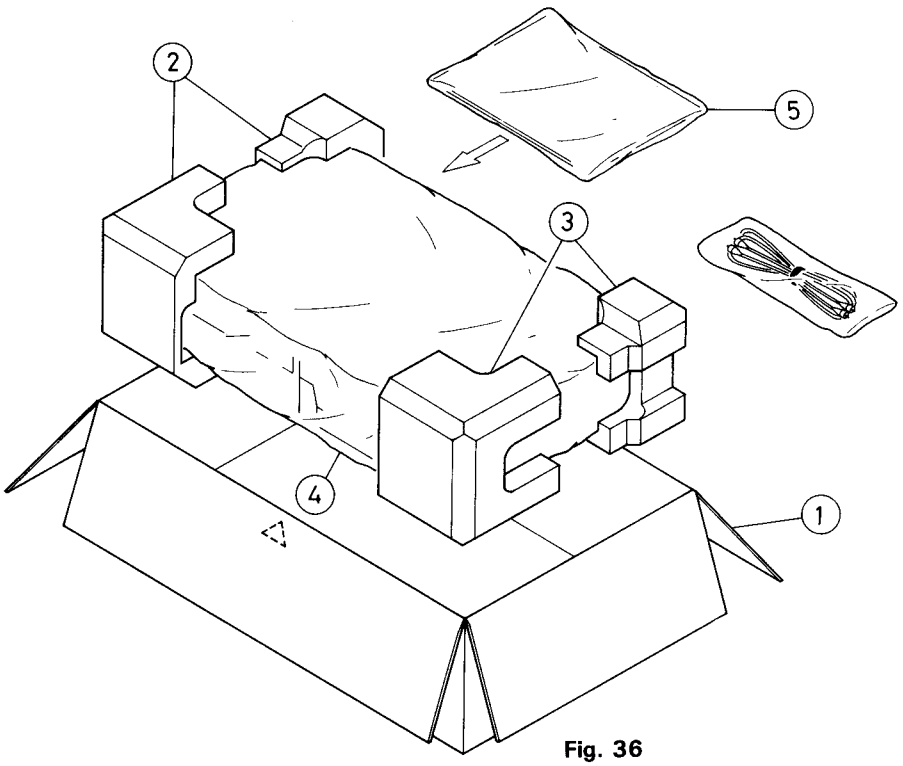


Fig. 36

Packing Parts List

⚠ parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

⚠	Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
		VND4006-015	Caution Label	Silver	1
		〃 -017	〃	Black	
		VNF0159-001	Feature Sticker		1
		VND5004-001	Mark Sticker	KD-VR320 B/E/G	1
		VPZ4001-001	Serial Ticket		1
		QZL1002-003	Warning Label	KD-VR320 B	1
		TJL000420-01	Serial	KD-VR320 B	1
	5	VPE3005-007	Poly Bag	for I. Book	1
		VND4113-001	G. Caution	KD-VR320 B/J	1
		Q0414H	Wire Clamp	for Power Cord	1
	4	VPK4002-006	Sheet	for Set	1
	〃	VPE3005-026	Poly Bag	〃	1
	1	VPC2148-002	Carton	Silver KD-VR320 B	1
	〃	VPC2149-002	〃	Black 〃	
	〃	VPC2148-003	〃	Silver KD-VR320 A	1
	〃	VPC2149-003	〃	Black 〃	1
	〃	VPC2148-004	〃	Silver KD-VR320 C	1
	〃	VPC2149-004	〃	Black 〃	1
	〃	VPC2148-005	〃	Silver KD-VR320 E	1
	〃	VPC2149-005	〃	Black 〃	1
	〃	VPC2148-006	〃	Silver KD-VR320 J	1
	〃	VPC2149-006	〃	Black 〃	1
	〃	VPC2148-007	〃	Silver KD-VR320 U	1
	〃	VPC2149-007	〃	Black 〃	1
	〃	VPC2148-008	〃	Silver KD-VR320 G	1
	〃	VPC2149-008	〃	Black 〃	1
	2	VPH3125-001	Cushion		1
	3	VPH3126-001	〃		1

Accessories

⚠ parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

⚠	Parts No.	Parts Name	Remarks	Q'ty
	VNN0159-301	Instruction Book	KD-VR320 B/E/G	1
	〃 -901	〃	KD-VR320 A/C/J/U	1
	VMP0039-00A	Pin Cord		1
	BT20060	Warranty Card	KD-VR320 B	1
	BT20066	〃	KD-VR320 B/G	1
	BT2029C	〃	KD-VR320 A	1
	VNC1200-002	Copyright Law Warranty	KD-VR320 C	1
	BT20025H	Warranty Card	〃	1
	T44362-001	CSA Label	〃	1
	BT20071A	SVC Center List	〃	1
	VNC5004-001	Mark Sticker	KD-VR320 B/E	1
	BT20047B	Warranty Card	KD-VR320 J/U	1
	BT20046B	Special Reply Card	〃	1
	BT20044D	Safety Instruction	KD-VR320 J	1
	E66416-003	Envelope	KD-VR320 J/U	1
	VNC5311-204	Caution Card	for PX KD-VR320 U	1
	〃 -203	〃	for EES 〃	1
	V04062-001	Siemens Plug	KD-VR320 U	1
	BT20064	Warranty Card	KD-VR320 G	1
	VND4037-002	F. Mark	〃	1

JVC
VICTOR COMPNAY OF JAPAN, LIMITED
RADIO & RECORDING MACHINE DIVISION 10-1, 1-chome, Ohwatari-cho, Maebashi-city, Japan

Printed in
-6003